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

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Thesis for obtaining a PhD degree at the Multilingualism Doctoral School of the University of Pannonia in the branch of linguistics

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2025

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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, signalling 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*

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LIST OF ACRONYMS

CS…….	Codeswitching
MA……	Maghreb Arabic
ICR……...	Intercoder reliability
CL…….	Cultural Linguistics
NA……	North Africa
MSA…….	Modern Standard Arabic
CM……...	Codemixing
LB…….	Lexical borrowing
RQ1……...	The first research question
RQ2……...	The second research question
L1…….	The first language
L2…….	The second language
L3…….	The third language
DMM……...	Dynamic Model of Multilingualism
TFLA……...	Trilingual first language acquisition
BFLA……...	Bilingual first language acquisition
EMM……	Enhanced multilingual monitor
MLA…….	Multilingual awareness
CLT……..	Communicative language teaching
MLF…….	Matrix Language Frame
ML……...	Matrix language
EL…….	Embedded language
IC……..	Inhibitory Control
ACH……..	Adaptive Control Hypothesis
CA…….	Conversation analysis
MCA…….	Moroccan Colloquial Arabic
LX……	A second language
BLP……..	Bilingual Language Profile
MLP…….	Multilingual Language Profile
BCSP……	Bilingual Code-Switching Profile
IUs…….	Intonation units
BAWS……...	Bilingual adults who stutter

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CHAPTER 1
INTRODUCTION

Overview

This chapter introduces the study by outlining its research objectives and significance. It situates the research within the broader context of multilingualism and codeswitching (CS), while explaining the unique linguistic and sociocultural dynamics of North Africa (NA). The chapter discusses the statement of the problem, highlighting the gaps in the existing literature. Additionally, it outlines the study's aims, research questions, and the importance of investigating trilingual CS practices, emphasizing the novel contributions of this research.

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 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

In today's world, multilingualism is increasingly common, driven by factors such as mixed marriages, global mobility, and expanding educational opportunities (Hoffmann, 2001). More than half of the global population is multilingual (Grosjean, 1982), leading to common phenomena such as borrowing, language mixing, shift, and attrition. These processes highlight the fluid nature of human interaction in multilingual settings.

CS, a natural outcome of language contact and a defining trait of bilingual and multilingual communication (Hoffmann, 2001), remained underexplored until Gumperz's seminal work in the 1960s and 1970s. Since then, the field has expanded considerably (Gardner-Chloros, 2009),

attracting scholars from various disciplines. Some have focused on the grammatical structures involved in CS (e.g., Backus, 2010), while others have explored psycholinguistic (e.g., Grosjean, 1982) and sociolinguistic perspectives (e.g., Shin, 2010). Over time, research has shifted from viewing CS as a sign of linguistic deficiency (Weinreich, 1953) to recognizing it as a systematic, rule-governed practice (Myers-Scotton, 1993; Poplack, 1980).

The multilingual reality of NA presents a distinctive context for multilingualism and CS. NA, historically referred to as the Maghreb, comprises Morocco, Algeria, and Tunisia. Originally inhabited by indigenous Amazigh communities, the region has been shaped by various ruling powers over the centuries. This historical influence has resulted in a rich and complex linguistic landscape characterized by the coexistence of multiple languages, including Arabic, Amazigh languages, French, and, to a lesser extent, Spanish and English. Each country in this region exhibits a unique linguistic profile. In Morocco, for example, there are fourteen languages, including varieties of Arabic, Amazigh languages, French, and Spanish. Algeria has eighteen languages, including Arabic varieties, Amazigh languages, and French, while Tunisia has seven languages, including Arabic varieties, Amazigh languages, and French (Eberhard et al., 2019, as cited in Brown, 2020).

During the pre-colonial era, before the French colonization of Algeria in 1830, Tunisia in 1881, and Morocco in 1912, the main languages spoken in NA were Amazigh, Darija (the colloquial Arabic dialects of Morocco, Algeria, and Tunisia), and Classical Arabic (Abbassi, 1977, as cited in Alalou, 2023). The colonial period brought about significant linguistic changes. The imposition of the French language during colonization left a lasting impact on the linguistic fabric of the region, creating a situation where bilingualism or trilingualism became common among North Africans (Alalou, 2023).

The post-independence period in NA was characterized by Arabization efforts aimed at promoting Arabic and reducing the influence of French (Alalou, 2023). Despite these efforts, French still competes with Arabic in several domains, including education, administration, and media (Boukous, 2012, as cited in Alalou, 2023). Additionally, English is becoming increasingly important and sometimes necessary in these fields (Brown, 2020). In Algeria, the aftermath of a violent struggle for independence further fuelled the Arabization movement, embedding Arabic deeply into the national identity (Brown, 2020). Following the expulsion of the French in 1962, Arabic was declared the national and first official language (Boucherit, 2003, as cited in Brown,

2020). Despite extensive efforts to promote Arabic, French continues to play a crucial role in various domains, creating a "multi-glossic" situation where both Arabic and French coexist (Brown, 2020, p. 4; Sayahi, 2011).

In Morocco and Tunisia, the linguistic situation mirrors that of Algeria, with French and English prevalent in scientific and technical fields, while Arabic retains a stronghold in literary and cultural domains, reflecting the region's rich tradition of Arabic poetry and philosophy (Talbi et al., 2019, as cited in Brown, 2020). Despite the widespread use of French and English, a significant proportion of daily communication occurs in Darija, which serves as the mother tongue for most North Africans (Alalou, 2023). This linguistic scenario is characterized by a complex interplay between Modern Standard Arabic (MSA), French, and Darija, with English gaining prominence in higher education and professional settings (Brown, 2020).

Today, French still confers a high degree of sophistication and prestige upon its users and continues to be valued for the educational and economic advantages it represents (Daoud, 2001; Sayahi, 2011). It remains essential for work in government, science, technology, and medicine, a situation that persists to this day (Brown, 2020), which is attributed to colonial education policies that promoted French as the language of prestige (Brown, 2020). Moreover, in the North African context, CS between Arabic and French serves as a sociolinguistic marker distinguishing between educated and non-educated speakers (Sayahi, 2007). Recently, English has begun to spread among educated North Africans, being viewed as the modern language of science, technology, international trade, and electronic communication (Daoud, 2001). It is increasingly used alongside French in scientific disciplines (Brown, 2020).

In conclusion, the sociolinguistic situation in NA is a product of historical, cultural, and political factors that have shaped the region's linguistic landscape. While Arabization policies aimed to solidify the status of Arabic, this multilingual environment is still marked by a dynamic interaction between indigenous languages, colonial languages, and the global lingua franca, English, creating a unique linguistic fabric.

1.2 Statement of the problem

Given the extensive research on CS in various bilingual and multilingual settings (e.g., Appel & Muysken, 2005; Auer, 1984, 2000, 2007; Baker, 2006; Chaiwichian, 2007; Gumperz, 1982; Halmari, 1997; Hoffmann, 1991; Koziol, 2000; Malik, 1994; Milroy, 1987; Myers-Scotton, 1995;

Panhwar, 2018; Poplack, 1980; Romaine, 1995; Sebba & Wootton, 1998; Wei, 1994), notable gaps in the literature persist—both in the broader study of CS and, more specifically, within the North African context.

First, the CS literature consulted on NA (e.g., Bentahila & Davies, 1983; Bouzemmi, 2005; Sayahi, 2011) has primarily focused on bilingual interactions, especially between Arabic and French. While these studies have provided valuable insights into CS in the region, research on trilingual CS involving Arabic, French, and English remains limited.

Second, it is important to highlight that, given the extensive number of researchers who have attempted to answer the core questions of when, how, and why speakers switch codes, "there exists a wide range of feasible, tried, tested, and well-established theoretical frameworks in the field" (Konidaris, 2010, p. 287). Among these, several influential models have offered critical insights into the contextual and structural dimensions of CS.

For example, Gumperz (1982) distinguishes between situational and conversational CS. He emphasizes that situational switching is triggered by changes in external variables such as topic, setting, or interlocutor—marking shifts in formality, social roles, or contextual framing—whereas conversational switching occurs within a stable situation and fulfils discourse functions such as reiteration, emphasis, or signalling group identity.

Myers-Scotton's (1993) Markedness Model further elaborates on the social motivations for CS, identifying three types: the unmarked choice, which affirms expected social relations; the marked choice, which negotiates a shift in social distance or roles; and the exploratory choice, used in situations of social uncertainty to test potential rights-and-obligations sets.

Auer (1984) also offers a typology, distinguishing between discourse-related and participant-related CS. As he explains, "The former refers to speakers' use of the juxtaposition between the two languages as a signalling device, and the latter refers to negotiation of language preference or proficiency between speakers in a given interaction" (Auer, 1984, p. 24).

Poplack (1980) presents another important distinction, this time between intimate and emblematic CS. She defines intimate CS as occurring when "a code-switched segment, and those around it, … conform to the underlying syntactic rules of two languages which bridge constituents and link them together grammatically" (p. 589). In contrast, emblematic CS includes "tags, interjections, idiomatic expressions, and even individual noun switches" (p. 614).

While these taxonomies have significantly contributed to our understanding of CS, they remain largely confined to sociolinguistic and syntactic perspectives, often overlooking cognitive and cultural dimensions.

In addition, much of the existing qualitative research on CS has seldom incorporated quantitative methods—such as word counts and percentage distributions—which are crucial for providing a clearer overview of linguistic preference and dominance in speakers' discourse and for revealing the roles CS plays in shaping that discourse.

Moreover, previous analyses of CS functions have frequently relied on researcher interpretation, often lacking mechanisms to ensure analytical objectivity or validate speaker intent.

In summary, this study responds to the identified contextual, theoretical, and methodological gaps in the existing literature by examining CS among MA–French–English trilingual speakers. It offers an interdisciplinary dimension for understanding CS, incorporates both qualitative and quantitative methods, and introduces a more objective and replicable analytical framework.

1.3 Aims of the study

This study aims to address significant contextual, theoretical, and methodological gaps in the current literature on CS, with a particular focus on trilingual speakers of MA, French, and English. First, it seeks to extend the scope of previous CS research within the North African context, which has largely focused on bilingual interactions rather than trilingual ones. This study also aims to provide 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. In addition, this study aims to offer a clearer overview of linguistic preference and dominance in speakers' discourse and to reveal insights into the roles CS plays in shaping that discourse by incorporating quantitative methods, such as word counts and percentage distributions. Furthermore, it aims to ensure analytical objectivity and validate speaker intent through the use of metalinguistic interviews and the calculation of intercoder reliability (ICR), thereby mitigating 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 the field of multilingualism research by providing a comprehensive exploration of the functions of CS among trilingual speakers of MA, French, and English—yet underexplored linguistic combination. Its contributions confront some critical gaps in the existing literature.

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 CL—instead of relying solely on traditional perspectives—namely structural, psycholinguistic, and sociolinguistic—that are largely confined to sociolinguistic and syntactic dimensions. More specifically, this study demonstrates that CS operates across cognitive and cultural dimensions, highlighting the need for an interdisciplinary theoretical approach that integrates structural, psycholinguistic, sociolinguistic, cognitive, and cultural perspectives to fully capture the layered and dynamic nature of CS in trilingual discourse.

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. Such detailed quantification is rare in CS research and represents a novel contribution that can inform future studies in the field.

Moreover, it contributes to a more objective analysis of the functions of CS through the use of metalinguistic interviews and the calculation of ICR, thereby mitigating researcher bias. This methodological rigor is particularly important in CS research, where subjective interpretations often dominate.

Ultimately, the significance of this study lies in bridging gaps in the literature on CS. This contribution is expected to inform and inspire future studies on multilingual communication.

1.6 Overview of the dissertation

The current study is organized into five chapters. The first 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 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).

The second 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, i.e. codemixing (CM) and lexical borrowing (LB). This is followed by an exploration of various 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.

The third 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.

The fourth chapter is divided into two sections. The first section (4.1) addresses 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 RQ2, providing a quantitative breakdown of the percentage distribution of each broader CS category across the dataset. This section also includes visual representations, i.e. tables and word clouds to highlight patterns in CS usage across key topics.

The fifth 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 and their significance. The second section (5.2) explores the study's implications, detailing its theoretical, methodological, and practical contributions. The third section (5.3) addresses the study's limitations, discussing the contextual and demographic constraints. 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.

CHAPTER 2
LITERATURE REVIEW

Overview

This chapter focuses on the theoretical and empirical foundations that shape the research design, context, and methodology of the current study. It offers an in-depth exploration of key concepts in bilingualism, multilingualism, and CS, covering its theoretical background, terminology, distinctions from related phenomena such as CM and LB, and various theoretical perspectives. The chapter further examines factors correlating with or influencing CS, insights from CS studies on trilinguals, and its functions. It also outlines qualitative research approaches relevant to the study of CS and concludes with a discussion on ICR.

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 CM and 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

The concept of *bilingualism* has been the subject of ongoing debate among scholars, with no universally accepted criterion for defining a bilingual individual. Hoffmann (1991) illustrates that bilingualism is a multifaceted phenomenon that resists clear-cut boundaries, both at the individual and societal levels. Similarly, Yim and Clément (2021) assert that “there is no consensus as to what criteria determine that someone is bilingual” (p. 1369), highlighting the ongoing challenge in establishing a universally agreed-upon definition.

Researchers can be broadly categorized into two groups based on their definitions of bilingualism. The first group asserts that full proficiency in both languages is required to qualify as bilingual. For example, Bloomfield (1933) defines bilingualism as the "native-like control of two languages" (p. 56), while Haugen (1953) argues that bilingualism occurs only when a speaker can "produce complete meaningful utterances in another language" (p. 7). This traditional perspective implies that a bilingual speaker should demonstrate equal proficiency in both languages. Dewaele (2015) critiques these early definitions as overly restrictive and rooted in a monolingual bias. He further argues that these definitions present significant methodological and theoretical challenges, such as the difficulty of determining whether someone possesses native-like control in a second language and the neglect of nonlinguistic dimensions of bilingualism.

Over time, criteria for defining bilingualism have evolved to become broader and more flexible, viewing bilingualism as "a continuum rather than a category" (Dewaele, 2015, p. 1). This new perspective has given rise to alternative definitions of bilingualism. The second group, for instance, claims the non-existence of ideal bilinguals in reality (Butler & Hakuta, 2004) and believes that finding "a standard norm for measuring the degree of bilingualism" is unfeasible and thus a bilingual speaker is a person who "regularly uses two or more languages in alternation" (Appel & Muysken, 2005, p. 3). Wardhaugh (2006) echoes this sentiment, suggesting that parity in language abilities among bilinguals is rare and exceptional (p. 96). Grosjean (2010) further supports this view, emphasizing that bilinguals are not necessarily equally fluent in all topics or domains across their languages. He attributes this variation to the *complementarity principle*, which posits that bilinguals use their languages for different purposes, with different interlocutors, and in different domains of life. As a result, proficiency levels in each language may vary depending on the need for that language and the domain in which it is used. This new perspective in considering the definition of bilingualism emphasizes practical language use over equal fluency, acknowledging the varied competencies bilinguals may have across languages and contexts.

It is worth noting that the shift away from focusing on the native-like qualities of bilinguals toward reflecting their realities as language users has been widely welcomed. However, the definition of bilingualism remains contentious. According to Dewaele (2015), this ongoing debate stems from the interdisciplinary nature of bilingualism research, with researchers from related fields advocating for diverse methods, criteria, and assumptions. As Valdes-Fallis (1978) aptly

concludes, what bilingual individuals may ultimately share is simply the fact that they are not monolingual.

2.2 Multilingualism versus bilingualism

The distinction between bilingualism and multilingualism has long been debated in scholarly circles, with multilingualism often viewed as an extension of bilingualism. The prevailing assumption was that insights about bilingualism could be directly applied to multilingualism (Stavans & Hoffmann, 2015). For instance, Haugen (1956) described multilingualism as "a kind of multiple bilingualism" (p. 9), while Grosjean (1997) defined bilinguals broadly as individuals who use "two (or more) languages (or dialects) in their everyday lives" (p. 164). This longstanding debate resurfaced during the International Symposium on Bilingualism in Oslo in 2011 (Dewaele, 2015), where a proposal to rename the conference to include "and Multilingualism" reignited controversy. Some argued that *bilingualism* already encompassed multilingual contexts, leading to the proposal's rejection and highlighting persistent disagreements about whether multilingualism should be regarded as a distinct phenomenon.

However, recent studies (e.g., Allgäuer-Hackl & Jessner, 2019; Aronin, 2019; Quay & Montanari, 2019) demonstrate that the distinction between bilingualism and multilingualism is increasingly evident. According to Aronin (2019), multilingualism refers to "the use of three and more languages and is distinguished…from bilingualism, the use of two languages. In this perspective, bilingualism is taken to be a special case of multilingualism rather than vice versa" (p. 3). Similarly, Quay and Montanari (2019) argue that "[M]ultilingualism should not be seen as a variant of bilingualism but rather be studied in its own right as further evidence of human potential and capacity for language" (p. 560). These perspectives underline the growing recognition of multilingualism as a distinct and complex phenomenon that merits dedicated research.

Building on these perspectives, data from various fields further reinforce the distinction between bilingualism and multilingualism. In the field of psycholinguistics, Aronin (2019) highlights that "multilingualism has a higher degree of complexity than bilingualism. In tri-plus multilingualism, the number of steps, algorithms, symbols, parts, and aspects are more numerous and denser than in bilingualism" (p. 7). This aligns with Ogechi's (2002) findings, which suggest that trilingual CS requires more complex language processing than bilingual CS. Choosing the

most suitable morpheme involves congruence checking across three language systems, resulting in fewer trilingual CS instances compared to bilingual ones.

Taking into account the concept of *cross-linguistic influence*, defined as "the influence that linguistic systems exert on each other and includes phenomena such as transfer, interference, borrowing, and avoidance" (Allgäuer-Hackl & Jessner, 2019, p. 327), it becomes evident that the interaction among three language systems introduces complexities beyond those observed in bilingual settings. As Herdina and Jessner (2002) note, "apart from the bidirectional relationship between L1 and L2, L3 can influence L1 and vice versa, and L2 and L3 can also influence each other" (p. 66). For instance, the particular accent in L3 could be shaped by the impact of both L1 and L2 (Aronin, 2019).

Empirical evidence for the distinction between bilingualism and multilingualism is further supported by the concept of *language attrition*, defined as the "non-pathological decrease in proficiency in a language that has previously been acquired by an individual" (Köpke & Schmid, 2004, p. 5). Herdina and Jessner's (2002) Dynamic Model of Multilingualism (DMM) suggests that language attrition arises when individuals do not invest sufficient effort to maintain their language skills. As Jessner and Megens (2019) point out, maintaining proficiency in three or more languages is significantly more challenging than sustaining one or two, as it requires a disproportionately greater amount of effort. This finding emphasizes the complexity and unpredictability of multilingualism compared to bilingualism (Aronin, 2019).

In the field of neurolinguistics, Higby et al. (2013) report that "certain unique properties of multilinguals are beginning to be noticed, particularly regarding early language representation, gray matter density, and speed of lexical retrieval" (p. 68). These findings provide clear evidence that multilingualism and bilingualism are distinct phenomena.

In the field of language teaching, researchers have shown considerable interest in how bilinguals' prior linguistic knowledge influences the process of learning additional languages. Stavans and Hoffmann (2015) assert that Trilingual First Language Acquisition (TFLA) is not merely "an extension or a variant of BFLA" (Bilingual First Language Acquisition). They emphasize that "TFLA is not the sum of three first languages, nor the addition of a third language to bilingualism, but rather a unique phenomenon with distinct characteristics and features that warrant independent study" (p. 147). As Allgäuer-Hackl and Jessner (2019) state, "L3 learners display higher language learning skills than second language learners" (p. 336). This phenomenon

is attributed to the M-factor or M-effect, an emergent characteristic of the multilingual mind. The M-factor encompasses "skills in language learning, language management and language maintenance" (Herdina & Jessner, 2002, p. 131) that multilingual individuals develop through the constant interaction of multiple languages in their minds (Allgäuer-Hackl & Jessner, 2019). According to Allgäuer-Hackl and Jessner (2019), the M-factor consists of two primary components: the Enhanced Multilingual Monitor (EMM) and Multilingual Awareness (MLA).

Several scholars, including Gibson and Hufeisen (2003) and Jessner (2006), have demonstrated the impact of MLA on L3 acquisition within the framework of the M-factor. For instance, two extensive research projects conducted at Innsbruck University revealed that multilingual individuals employ different strategies compared to monolinguals and bilinguals. These studies highlighted significant differences in communication approaches, underscoring the unique skills and abilities multilingualism fosters (Allgäuer-Hackl & Jessner, 2019). As Allgäuer-Hackl and Jessner (2019) conclude, "The level of multilingual/metalinguistic awareness and skills seems to increase with the number of languages involved" (p. 337), explaining the skill gap between monolingual and bi- or multilingual learners in acquiring additional languages.

In their study on relative clauses, Berkes and Flynn (2012) report that the L3 study group outperformed the L2 group in this area. They propose that "results would indicate that enhancement took place in the learners' syntactical knowledge due to multilingual experience" (Berkes & Flynn, 2012, p. 10). Similarly, Kemp's (2007) research on language learning strategies among multilinguals revealed specific patterns as the number of languages known by learners increased. Notably, learners employed a greater number of grammar learning strategies and used them more frequently. Kemp notes that this "may mean that, compared to L2 learning, augmentation in number and frequency of strategies used occurs to a greater extent during the acquisition of the third language, increasing more gradually in additional languages" (Kemp, 2007, p. 257).

De Angelis (2005), in her examination of non-native lexical transfer, highlights a behavior unique to multilinguals. She observes that this type of behavior "speakers of two languages do not display, highlighting the uniqueness of multilinguals' behavior, and the need to view multilinguals as unique learners and speakers, rather than as bilinguals with additional languages" (p. 14). De Angelis suggests a reconceptualization of vocabulary acquisition, wherein knowledge of words is transferred from one system to another, akin to moving from a source system to a guest system.

She argues that “the interaction between non-native languages cannot be assumed to be governed by the same principles that govern the interaction between the native and one non-native language” (De Angelis, 2005, p. 14).

In summary, considering the points discussed above, it is reasonable to assert that the distinction between bilingualism and multilingualism goes beyond mere quantitative differences. Future studies should begin to adopt these terms more precisely to reflect their distinct characteristics. As Aronin and Jessner (2015) note, “Bilingualism and multilingualism are close, and overlapping in many ways, but, as a bilingual turns into a multilingual, the phenomenon diverges (bifurcates), quantitative and qualitative differences become deeper, to the extent that the nature of the emerging phenomena changes” (p. 281).

2.3 Theoretical background of CS and terminology issues

This section provides a theoretical overview of CS, exploring its historical development, evolving scholarly perspectives, and key terminology issues. It examines the distinctions between CS and related concepts, namely CM and LB, highlighting the debates and challenges surrounding these terms.

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

Perhaps the earliest studies on CS can be traced back to sociolinguistic observations by Ronjat (1913) and Léopold (1941), who analyzed their bilingual children’s language use, particularly their systematic association of a specific language with a specific parent. These early studies highlighted how language choice can reflect social and interpersonal dynamics.

In the mid-20th century, scholars like Weinreich (1953) framed CS as a phenomenon of interference, where a speaker’s first language influences their second. Weinreich argued that the “ideal bilingual” switches languages only in response to situational changes, such as shifts in interlocutors or topics, and explicitly excluded intrasentential switching, which he considered a deviation from linguistic norms (p. 73). Inspired by Weinreich’s work, Vogt (1954) introduced the term *CS* (Stell & Yakpo, 2015) to describe the “interference between two languages in a bilingual society” (Vogt, 1954, p. 368). These early perspectives were grounded in the erroneous assumption that CS is a compensatory strategy, arising from limited proficiency in one language (Yim &

Clément, 2021). Although early views framed CS as a linguistic limitation, they later paved the way for research recognizing it as a systematic practice.

Gumperz' (1958) work marked a turning point by reframing CS as a positive and strategic behavior, demonstrating how speakers alternate codes based on conversational settings to achieve interactional goals. Nilep (2006) emphasizes Gumperz' enduring influence, noting that "no sociocultural linguist has been more influential in the study of code switching than John J. Gumperz," (p. 6) highlighting his significant impact on sociolinguistics and linguistic anthropology. However, Gumperz (1982) later expressed concern about the societal implications of CS, cautioning that its increasing prevalence in multilingual contexts could destabilize linguistic norms. He observed that "the increasing displacement of formerly stable populations and the growing ethnic diversification of metropolitan centres" suggest that "communicative uses of code-switching are more likely to increase than to decrease" (p. 64).

Building on these concerns, Romaine (1995) argued that CS can contribute to the erosion of minority languages. She noted that LB, which "starts off as code-switches," can evolve into loanwords that gradually replace native equivalents (p. 124). A striking example is the extinction of the Domaaki language of Pakistan, attributed to sustained language contact with Pashto (Baart, 2003). Baart further emphasized that languages without governmental protection are particularly vulnerable. Backus (2005) reinforced this perspective, observing that "contact-induced" changes often arise from individual linguistic innovations, which, when adopted collectively, can drive systemic language shifts (p. 319).

The 1970s marked a pivotal period in the study of CS, as it began to receive sustained attention as an independent topic of scholarly inquiry (Stell & Yakpo, 2015). During this time, linguistic anthropologists adopted the view that CS is a "systematic, skilled, and socially meaningful" behavior (Woolard, 2004, p. 74). This perspective represented a departure from earlier beliefs, which viewed CS as "lapses of linguistic ability, memory, effort, or attention" (Woolard, 2004, p. 74). However, debates persisted regarding how the meaning of CS is produced and whether its explanation should focus on culture-specific factors or universal principles, balancing the influence of social structures and individual agency (Woolard, 2004).

The 1980s also marked a significant period in CS research, characterized by a shift toward structural and psycholinguistic perspectives. Poplack (1980) was a pivotal figure in challenging deficit-based views, redefining CS as a marker of linguistic proficiency rather than deficiency. She

argued that CS requires strong command of multiple languages, particularly for intrasentential switches. Poplack (1980) also proposed structural constraints, such as the Equivalence Constraint, which suggests that CS occurs at points where the grammars of both languages align, allowing for seamless transitions between codes.

During the same period, Grosjean (1982) introduced psycholinguistic insights, focusing on the cognitive mechanisms involved in CS production and perception. Grosjean (1985) developed the concept of *language mode*, explaining how bilinguals switch between different levels of activation for their two (or more) languages, depending on contextual and communicative demands. Together, the work of Poplack and Grosjean during the 1980s significantly advanced the understanding of CS as both a structural and cognitive phenomenon.

In the 1990s, research expanded to explore CS in education and community contexts. Cole (1998), for example, demonstrated the strategic use of students' L1 in English language classrooms. He found that L1 could support learners by facilitating grammar explanations, vocabulary translation, and the comprehension of complex instructions, particularly at lower proficiency levels. By challenging communicative language teaching (CLT) methodologies that often discourage L1 use, Cole emphasized the value of CS in reducing learner frustration and enhancing comprehension. His findings emphasized the need for flexible teaching strategies that adapt to learners' linguistic backgrounds and highlighted the practical use of CS in educational settings.

Around the same time, Zentella (1997) conducted an ethnographic study of Puerto Rican families in East Harlem, providing a detailed account of bilingual language use in a diverse community. Over 14 years, she observed how children navigated multiple linguistic codes, such as Puerto Rican Spanish, Puerto Rican English, and African American Vernacular English within their multilingual environment. She demonstrated how CS played a vital role in language acquisition, community integration, and identity construction. However, Zentella also highlighted the challenges of maintaining bilingualism in the face of dominant English-language schooling and social pressures. Her work advocated for bilingual education as a means of preserving heritage languages and fostering cultural awareness.

Recent research has continued to reevaluate attitudes toward CS, particularly in multilingual contexts influenced by globalization and evolving language ideologies. Rodriguez-Fornells et al. (2012) noted that while CS was historically viewed as problematic, it is now

increasingly recognized as a natural and positive aspect of bilingual discourse. Lawson and Sachdev (2000) demonstrated that, in some communities, CS operates as an unmarked in-group practice, reflecting shared identity and social cohesion. Similarly, Gardner-Chloros et al. (2005) observed that younger generations often embrace CS as an integral part of their cultural identity, further highlighting its role in shaping modern bilingual practices.

In conclusion, the history of CS research reflects an evolving understanding of its functions and significance. While early studies associated CS with linguistic interference and deficiency, later scholarship reframed it as a systematic and skilled practice, integral to bilingual communication. Recent works have highlighted its role in education, identity construction, and cultural expression, demonstrating how CS bridges linguistic, social, and cultural boundaries. As globalization and shifting ideologies continue to influence multilingual practices, CS has emerged as a critical lens through which to study the complexities of bilingualism.

2.3.2 Terminology issues

Defining CS has long been a contentious issue among researchers. One challenge lies in establishing a unified interpretation of the term *code*. While some scholars equate "code" with "language" (e.g., Muysken, 2000), others argue that the two are distinct concepts that require differentiation (e.g., Gafaranga & Torras i Calvo, 2001). Romaine (2000) adopts a neutral stance, suggesting that the term "code" in CS "does not commit us to taking a decision as to whether the varieties or codes concerned constitute languages or dialects" (pp. 61–62). Adding to this complexity, scholars offer broad definitions that attempt to encompass this fluidity. Woolard (2004) defines CS as "an individual's use of two or more language varieties in the same speech event or exchange" (pp. 73–74), emphasizing that "language varieties" include not only distinct languages but also dialects, registers, politeness levels, and styles. Similarly, Myers-Scotton (1995) describes CS as "the use of any two or more linguistic varieties in the same conversation, whether they are different languages, styles, or dialects" (p. 2).

Another reason for the lack of consensus lies in the varying levels at which CS occurs. Hoffmann (1991) offers a broader description, stating that CS involves "the alternate use of two languages or linguistic varieties within the same utterance or during the same conversation" (p. 110), while Valdes-Fallis (1978) defines CS as "the alternation of two codes on the word, phrase,

clause, or sentence level" (p. 1). This variation in levels of CS contributes to the ambiguity, as researchers debate the scope of what constitutes CS.

Furthermore, some scholars focus on the role of interlocutors in defining CS. Valdes-Fallis (1978) highlights the alternation of languages by the same speaker, whereas Clyne (1972, as cited in Murad, 2013) argues that CS can also occur when one speaker uses one language and another responds in a different one. This distinction between intra-speaker and inter-speaker switching adds another layer of complexity to the definition.

Finally, the lack of a unified definition stems from the inconsistent terminology used across studies. As Milroy and Muysken (1995) note:

> the field of code-switching research is replete with a confusing range of terms descriptive of various aspects of the phenomenon. Sometimes the referential scope of a set of these terms overlaps, and sometimes particular terms are used in different ways by different writers. (p. 12)

This terminological inconsistency is further exacerbated by the diversity of academic disciplines studying CS. According to Nilep (2006), "scholars do not seem to share a definition of the term. This is perhaps inevitable, given the different concerns of formal linguists, psycholinguists, sociolinguists, philosophers, anthropologists, etc." (p. 1).

Despite these challenges in reaching a unified definition, several scholars have proposed distinct definitions of CS that reflect their theoretical perspectives and research priorities. Exploring these definitions provides valuable insights into how the phenomenon has been conceptualized across different disciplines and contexts.

From a functional perspective, CS is often viewed as a communicative strategy that allows speakers to achieve specific social and interactional goals. Anchimbe (2015) describes CS as "quite often, a conscious activity by multilingual speakers who switch to other languages in order to perform a certain action, e.g., insult, warn, reproach, exclude, include, or denigrate" (p. 140). This highlights the intentionality behind CS and its role in fulfilling specific communicative objectives. Yim and Clément (2021) define CS as "the spontaneous switching from one language to another within a single speech event," emphasizing its use as "a communicative and social strategy" to index "social categories and group solidarity" (p. 1369). Similarly, Auer (1999) focuses on the interactional and contextual significance of CS, defining it as "the juxtaposition of

two codes (languages)…perceived and interpreted as a locally meaningful event by participants" (p. 310). These definitions highlight CS's role in achieving specific communicative goals.

From a structural perspective, scholars focus on the grammatical patterns and typologies of CS. Muysken's (2000) influential typology categorizes CS into three potentially overlapping types. Insertional switching occurs when constituents from one language (A) are inserted into the morphosyntactic frame of another language (B), which dominates the structure. Alternational switching refers to instances where languages A and B alternate without encroaching upon each other's morphosyntactic frames, maintaining distinct grammatical structures. Lastly, congruent lexicalization involves the convergence of A and B within a shared morphosyntactic frame, reflecting extensive grammatical compatibility between the languages.

Myers-Scotton (2006) offers a specific definition of CS, describing it as a situation where "elements of two or more language varieties are found in the same clause, but only one of these varieties is the source of the morpho-syntactic frame for the clause" (p. 241). This focus on the dominance of one language's grammatical structure aligns with the insertional type of CS identified by Muysken, highlighting the hierarchical relationships that can exist between languages in bilingual speech. Together, these structural classifications provide a comprehensive framework for understanding how languages interact at the morphosyntactic level. They examine the constraints that govern CS.

The psycholinguistic perspective conceptualizes CS as a cognitive phenomenon that reflects the bilingual mind's ability to manage multiple linguistic systems. Kootstra (2015) defines CS as "the use of elements (either single words or longer stretches of words) from more than one language within the same utterance," distinguishing it from transfer by noting that CS involves "the overt use of multiple languages in the same sentence" (p. 40). Unlike transfer, which involves covert cross-language interactions in L2 learners, CS is characterized by the overt use of multiple languages within the same sentence. This distinction accentuates CS as an active, visible process that reveals the dynamic interplay of linguistic systems in the bilingual mental lexicon. By examining how bilinguals alternate between languages within utterances, this perspective sheds light on the cognitive mechanisms underlying multilingual language use.

Broad definitions of CS that integrate multiple perspectives also exist. Myslín and Levy (2015), for instance, offer a general definition of CS as "the alternation of multiple languages within a single discourse, sentence, or constituent," emphasizing its occurrence among "fully

proficient multilinguals" (p. 873). Their definition, grounded in psycholinguistic considerations, positions CS as a blanket term encompassing switches both within and between utterances. This approach reflects not only the structural alternation between languages but also the cognitive competence of multilingual speakers, illustrating how CS manifests as a controlled, meaningful interaction of linguistic systems.

In conclusion, despite the diversity of perspectives and definitions, researchers broadly agree on the fundamental nature of CS. As Lawson and Sachdev (2000) observe, while CS has generated significant discussion and debate, it is generally understood 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). This shared understanding emphasizes the core phenomenon of linguistic alternation, even as theoretical approaches and disciplinary focuses differ.

2.3.2.1 CS versus codemixing

The distinction between CS and CM has been a subject of considerable debate among scholars. While some use the terms interchangeably (Gardner-Chloros, 2009; Parafita Couto et al., 2023; Rubino, 2014; Wei, 2000), others argue for their distinctiveness (Aikhenvald, 2002; Bokamba, 1989; De Lima Silva, 2020; Kachru, 1983; Poplack, 1980; Singh, 1982). Stavans and Hoffmann (2008) highlight this variability, noting that "there is considerable variance in the way terms such as mixing (as in language mixing and code mixing) and code-switching are used. Sometimes their use suggests that they denote distinct phenomena but in other cases they are used synonymously" (p. 152).

For some researchers, the distinction hinges on functional and structural differences. Auer (1998), for instance, characterizes CS as discourse-related and locally meaningful, while CM reflects global linguistic integration through recurrent patterns. Stavans and Muchnik (2008) further differentiate CS as occurring at major syntactic or prosodic boundaries, whereas CM involves intrasentential alternations, such as morphemes, words, phrases, or clauses. Similarly, Stavans and Swisher (2006) emphasize that CS operates intersententially, while CM reflects more advanced morphosyntactic integration within sentences.

The relationship between CS, CM, and language competence is another area of differentiation. Stavans and Muchnik (2008) argue that CM requires higher bilingual proficiency

due to the need for seamless integration of morphosyntactic elements. Hoffmann and Stavans (2007) similarly assert that as bilingual speakers gain greater linguistic dominance, they shift from producing more CS instances to more CM instances, reflecting increased language command.

Despite these distinctions, "it is fair to say that it is difficult to draw the line between the two terms" (Stavans & Swisher, 2006, p. 197). This confusion arises from the numerous and often inconsistent definitions of CS and CM (Stell & Yakpo, 2015). Anchimbe (2015) adds to this complexity by noting that even intrasentential switches, often categorized as CM, can serve intentional, functional purposes, reflecting the strategic nature of language alternation. The fluidity in definitions and the overlap in functional roles contribute to the persistent difficulty in clearly separating CS from CM.

For the purposes of this study, the term CS is used as a cover term encompassing all types of alternations, whether within a sentence or at sentence boundaries. Myslín and Levy (2015) state that "Although code-mixing is sometimes used for intrasentential switching, consensus is not widespread on the term's precise meaning and the theoretical distinctions it may make. Therefore, we simply refer to all of these phenomena as code-switching" (p. 873). Moreover, while structural distinctions between CS and CM have been identified, this study prioritizes their shared communicative functions. As Anchimbe (2015) notes, "the choice of a language, even if only through an intrasentential switch, embodies a specific strategic intention of the speaker" (p. 144). Similarly, Amuzu (2015) observes that "both insertional and alternational types of CS may be treated alike" (p. 85), underscoring the functional similarities across structural variations. By adopting CS as an umbrella term, this study moves beyond structural categorizations to emphasize the intentional and communicative dimensions of language alternation.

2.3.2.2 CS versus lexical borrowing

According to Deuchar (2020), Weinreich was one of the first scholars to draw a clear distinction between CS and LB, using the term *interference* to describe instances where a bilingual speaker, while communicating in language X, incorporates a term from language Y (Weinreich, 1953). This phenomenon aligns with what is now commonly recognized as CS. In contrast, Weinreich (1953) characterized LB as the integration of a term from language Y into the lexicon of language X, rendering it a stable and established component of the recipient language. Poplack and Meechan (1998) emphasized the ongoing challenge of distinguishing these phenomena, noting that this issue

lies “at the heart of a fundamental disagreement among researchers about data” (p. 127), a debate that persists in scholarly discourse (Deuchar, 2020). This challenge highlights the need for clear criteria to differentiate the two.

According to Stell and Yakpo (2015), distinguishing between CS and LB is imperative for two reasons. First, early research by Haugen and Weinreich in the 1950s revealed that established loanwords and less integrated foreign-origin words behave differently, with established loanwords demonstrating greater phonological integration into the host language. Second, efforts to define syntactic constraints for permissible switching points often failed to account for established loanwords and foreign-origin single words that were less likely to be widely accepted borrowings. These findings suggest that such constraints apply to CS but not to LB (Stell & Yakpo, 2015). Moreover, Treffers-Daller (2023) highlights the importance of this distinction in psycholinguistic and neuroscientific studies, where reaction times and event-related potential (ERP) signals differ between items integrated into the recipient lexicon and those employed in CS contexts.

Prestige and need are primary motivations for borrowing, as emphasized by Weinreich (1953), Myers-Scotton (2006), and Haspelmath (2009). Sayahi (2007) concurs, noting that these factors are especially relevant in the North African context. LBs are generally categorized as cultural or core (Myers-Scotton, 2006). Cultural borrowings “are words that fill gaps in the recipient language’s store of words because they stand for objects or concepts new to the language’s culture” (Myers-Scotton, 2006, p. 212). These are often described as “loanwords by necessity” (Haspelmath, 2009, p. 48). However, Haspelmath (2009) argues that cultural borrowing is not strictly essential, as languages possess the creative capacity to coin new terms internally.

Core borrowings, on the other hand, are “words that duplicate elements that the recipient language already has in its word store” (Myers-Scotton, 2006, p. 215). Haspelmath (2009) notes the complexity of explaining core borrowings, questioning why speakers adopt foreign terms when native equivalents exist. He concludes that the desire to align with the prestige of the donor language often drives such borrowings.

Scholars have proposed various criteria to distinguish LB from CS. Treffers-Daller (2023) provides a comprehensive overview of these criteria as attested in the previous literature. According to this overview, LB is typically characterized by the use of single lexical items rather than multiword units. LBs undergo syntactic integration, adapting to the grammatical structure of the recipient language. They also exhibit phonological integration, aligning with the phonological

system of the recipient language. Additionally, LB involves both central and peripheral morphological integration, reflecting the morphological rules of the recipient language. LBs are semantically integrated, conforming to the meanings and usage patterns of the recipient language. They are widespread within the bilingual community, making them a common feature of bilingual speech. Furthermore, LBs are often included in the mental lexicons of bilingual speakers or listed in dictionaries of the recipient language. They are frequently used in the recipient language, sometimes replacing or competing with existing terms. Finally, LBs are accessible even to monolingual speakers of the recipient language, making them part of the general linguistic repertoire (Treffers-Daller, 2023, p. 4).

In contrast, CS is typically associated with multiword units rather than single lexical items. It lacks syntactic integration, meaning that the switched elements do not adapt to the grammatical structure of the recipient language. Similarly, CS does not undergo phonological integration, retaining the phonological characteristics of the source language. Peripheral morphological integration is also absent, further highlighting its distinction from LB. Codeswitched elements are not semantically integrated into the recipient language in the same way as LBs. They are not widespread within the bilingual community and are generally restricted to bilingual speakers. Additionally, codeswitched items are not included in the mental lexicons of bilingual speakers nor listed in dictionaries of the recipient language. They are infrequently used in the recipient language and do not replace or compete with existing terms. Finally, codeswitched items are rarely, if ever, accessible to monolingual speakers of the recipient language, as they remain outside the general linguistic repertoire (Treffers-Daller, 2023, p. 4).

However, according to Treffers-Daller (2023), these various criteria do not hold equal importance, and there are significant challenges associated with applying many of them. First, the limited size of bilingual corpora compared to monolingual ones poses difficulties in assessing how frequent or widespread a particular lexical item is. Additionally, the frequency of an item can vary greatly across different bilingual communities, complicating attempts to make generalizations. Second, language convergence at the syntactic, morphological, and phonological levels can make it challenging to determine whether a word has been fully integrated into the recipient language. Third, exceptions exist for every criterion. For instance, in Brussels Dutch, many French adverbs are not syntactically integrated despite being listed in dictionaries as LBs from French (Treffers-Daller, 2023, pp. 3–4).

Myers-Scotton (2006) supports these observations by addressing the oversimplification of how LBs are treated in linguistic descriptions. She argues that while the view that LBs are typically adapted to the phonological and morphological structure of the borrowing language has been widely accepted, it often overlooks the subtle and variable ways in which LBs are integrated, particularly at the phonological level. Sayahi (2011) provides further insight into this complexity in the context of Maghreb Arabic, particularly Tunisian Arabic. He notes that deciding whether a word is a loanword or not is not a straightforward process in Tunisian Arabic due to several factors. Continued access to French facilitates faithful French phonetic renditions of even the most established loanwords, blurring the lines between LB and direct transfer. Additionally, the absence of a comprehensive Tunisian Arabic dictionary hinders researchers from relying on this otherwise decisive tool to determine whether a word is fully integrated. Finally, the judgment of monolingual speakers is problematic, as many specialized concepts are unfamiliar to older or less-educated monolinguals, who are often non-French speakers.

Taking into account the challenges of distinguishing CS from LB, Treffers-Daller (2023) proposes an alternative approach. She argues that "what defines borrowing is listedness, and not the size of the donor language item, nor integration (Poplack, 2018), nor frequency (Myers-Scotton, 1993) in the recipient language vocabulary" (p. 2). Listedness, as defined by Muysken (2000), is "the degree to which a particular element or structure is part of a memorised list which has gained acceptance within a particular speech community" (p. 71). Based on this definition, Treffers-Daller (2023) formulates the listedness criterion: "The key criterion for a word to be considered as a borrowing is listedness in the mental lexicon of the speakers of the recipient language" (p. 7). The assumption is that speakers are aware of whether a particular word or multiword unit (MWU) is part of their mental lexicon and can recognize these items accordingly (Treffers-Daller, 2023).

The concept of *entrenchment* is highly relevant in this context. As described by Stell and Yakpo (2015), entrenchment is a term from usage-based linguistics that refers to the extent to which linguistic items become firmly established through frequent use and widespread acceptance. Stell and Yakpo (2015) explain that insertional CS involves the synchronic use of elements from another language. In contrast, LB is described as a diachronic process in which repeated use of these words leads to their entrenchment in individual speakers' lexicons and their eventual spread throughout the speech community, where they are recognized "as accepted and conventional words

in the language" (p. 28). Stell and Yakpo (2015) emphasize that involving bilingual speakers in evaluating how established certain items are in their speech community provides valuable empirical data to distinguish loanwords at different stages of integration. Entrenchment, therefore, can be understood as the process through which words gain listedness, becoming entrenched in individual speakers' mental lexicons and eventually spreading throughout the speech community.

In conclusion, distinguishing CS from LB remains a complex task in bilingualism research. While criteria such as syntactic integration, phonological adaptation, and frequency have offered insights, Treffers-Daller's (2023) concept of listedness provides an innovative approach by emphasizing the mental lexicon and community acceptance. This perspective aligns with the concept of entrenchment, which describes how repeated use and social acceptance solidify linguistic items in individual and collective lexicons (Stell & Yakpo, 2015). By incorporating bilingual speakers' metalinguistic judgments (e.g., Chen, 2015), researchers can better distinguish between CS and LB.

2.4 Different perspectives of the notion of CS

As a natural and universal consequence of globalization and multilingualism (Amorim, 2012), CS has garnered significant scholarly attention. Researchers have examined this phenomenon through various disciplinary lenses. Stavans and Muchnik (2008) observe that studies on the interaction of two languages, leading to CS and CM among bilinguals, "have clustered into three main perspectives: the structural, the psycholinguistic and the sociolinguistic" (p. 484).

Each of these perspectives addresses "a different set of research interests, recognizes distinct research questions, and applies different criteria for relevant data" (Amuzu, 2015, p. 85). This section provides an overview of influential theories and models from these perspectives, offering a comprehensive understanding of the phenomenon of CS.

2.4.1 CS from a structural perspective

Structural approaches to CS (e.g., Poplack & Meechan, 1995; Myers-Scotton, 1997) are grounded in formal syntactic and psycholinguistic models, aiming to uncover "the nature of the grammar underlying bilingual mixture" (Winford, 2003, p. 126). From this perspective, CS is defined as the "juxtaposition of sentences or sentence fragments, each of which is internally consistent with the morphological, syntactic (and optionally, phonological) rules of its lexifier language" (Poplack &

Meechan, 1995, p. 200). In other words, CS is not a random mix of languages, but is rule-governed (Poplack, 1980; Parafita Couto et al., 2023; Schmid, 2014). CS is generally classified into two primary patterns: intersentential and intrasentential, distinguished by the point at which the language switch occurs (Stavans & Muchnik, 2008).

As Migge (2015) explains, intersentential CS involves switches at clause or sentence boundaries, with each clause or sentence originating from a different language. In contrast, intrasentential CS refers to the insertion of individual elements or phrases from one language into the morpho-syntactic frame or sentence structure of another language. Structural research has primarily focused on intrasentential CS due to its complexity, as it "produces various kinds of hybrid structures that require explanation" (Winford, 2003, p. 126).

According to Gardner-Chloros (2009), three main grammatical approaches to CS have been identified: variationist approaches, generativist approaches, and production approaches. The first two, perceived as alternational models, propose constraints that govern the points at which CS can occur within a sentence. These approaches suggest that switches are not random but instead follow specific grammatical rules, with some expressions in CS considered ungrammatical. Examples of these constraints include the clitic constraint (Pfaff, 1979; Timm, 1975), the free morpheme constraint (Poplack, 1980), the equivalence constraint (Poplack, 1980), and the government constraint (Di Sciullo et al., 1986). However, numerous counterexamples that challenge these constraints have been documented. For instance, Bentahila and Davies (1983) highlight examples where switches occur in positions deemed ungrammatical by these models, illustrating the variability and adaptability of CS. Similarly, Nortier (1990) and Muysken (1995) show how language pairs often defy these constraints, revealing the limitations of such approaches in fully explaining CS.

The third grammatical approach to CS is Myers-Scotton's Matrix Language Frame (MLF) model. The MLF is an insertional model based on the idea that CS involves a dominant language providing a grammatical frame into which elements from another language are inserted. In this model, one language always dominates by imposing its grammar on the embedded language. According to Gardner-Chloros (2009), the MLF model differs from the previously mentioned grammatical models in several ways. First, it introduces the concept of a Matrix Language (ML), which supplies functional elements in the sentence, and an Embedded Language (EL), which

provides content elements. Second, it connects CS not only to grammatical structure but also to psycholinguistic processes, such as language activation.

Similarly, Stavans and Muchnik (2008) identify Poplack's constraints and the MLF model as two of the most influential approaches to the structural description of CS. However, they also highlight significant limitations in both frameworks. For instance, they note that the MLF model is primarily based on language contact phenomena observed predominantly among adults, in contexts involving typologically similar languages, and within bilingual rather than multilingual settings (p. 488). In cases of trilingualism, particularly when children acquire three typologically divergent language systems simultaneously as their first languages, the MLF model faces challenges in clearly defining the roles of the ML and EL (Stavans & Muchnik, 2008).

In conclusion, structural research on CS has significantly enhanced our understanding of the grammatical mechanisms underlying language contact, demonstrating that CS is not a random phenomenon but is instead subject to grammatical constraints. However, despite substantial progress in this field, "universal grammatical constraints remain elusive" (Kroff et al., 2023, p. 441). This gap is largely attributable to the variability in bilingual profiles, populations, and the noncomparable methodologies used to collect and analyse data (Parafita Couto et al., 2023). As Migge (2015) notes, many issues remain "difficult to resolve by solely relying on structural methods of data collection and analysis" (p. 195). Moreover, Gardner-Chloros (2009) emphasizes that there is no evidence of impossible combinations of any two languages, highlighting the adaptability of codeswitchers, who frequently manipulate linguistic rules to achieve their communicative goals (Muysken, 2000). These insights reinforce the need for more interdisciplinary approaches that account for both linguistic structures and the sociocultural factors influencing CS, to better capture its variability and complexity.

2.4.2 CS from a psycholinguistic perspective

Kroff et al. (2023) highlight that psycholinguistic research in bilingualism focuses on understanding the linguistic, cognitive, and neural mechanisms that enable bilinguals to effectively select and switch between languages. From this perspective, CS is not merely a communicative strategy but a complex interplay involving language activation, inhibition, and executive control. As Myslín and Levy (2015) note, traditional psycholinguistic approaches often treat language choice as an automatic process driven by internal production mechanisms, rather than as a

deliberate action shaped by conscious discourse goals. Research on CS frequently explores how bilinguals and multilinguals access and activate words from their mental lexicon, shedding light on the cognitive processes underlying language production and comprehension.

Theoretical models in psycholinguistics provide valuable frameworks for exploring these cognitive processes. Green's (1998) Inhibitory Control (IC) model posits that bilinguals rely on inhibition mechanisms to suppress non-target languages, minimizing interference and ensuring fluent communication. This model emphasizes the interconnected nature of bilingual lexical-semantic systems, which increases the likelihood of cross-linguistic competition. To resolve this competition, executive control is employed to activate the target language while inhibiting the non-intended one. The IC model also accounts for factors such as language dominance and contextual demands, noting that greater inhibitory effort is often required to suppress the dominant language when switching to the less dominant one. This framework has provided a foundation for understanding phenomena like *switch costs*, where transitions between languages, particularly from dominant to non-dominant ones, incur delays or errors (Meuter & Allport, 1999). However, the IC model's focus on two languages may not fully account for the added complexity of managing three or more linguistic systems, as is the case in multilingual speakers.

According to Green and Abutalebi (2013), prior psycholinguistic research on bilingual speech production and comprehension highlights the role of cognitive control in managing linguistic systems, positing that individuals increase cognitive control to achieve specific communicative goals. This view emphasizes control processes as static mechanisms that are employed as needed to resolve conflicts, suppress interference, or manage task demands. In contrast, the Adaptive Control Hypothesis (ACH) (Green & Abutalebi, 2013) proposes a more dynamic and flexible framework, suggesting that language control processes themselves adapt over time to the recurrent demands of different interactional contexts. The ACH identifies specific interactional environments—single-language, dual-language, and dense CS contexts—each requiring tailored control strategies. For instance, dense CS contexts involve frequent, fluid alternations between languages, necessitating less rigid inhibition mechanisms, while single-language contexts demand strict suppression of non-target languages. By highlighting how language control evolves in response to contextual demands, the ACH shifts focus from static inhibition processes to the adaptive nature of cognitive control.

Grosjean's (2012) *language mode* model makes a significant contribution to the psycholinguistic study of CS by emphasizing how external factors, such as participants and topics influence the continuum of language activation, shedding light on the cognitive mechanisms that enable bilinguals to manage and alternate between languages effectively. Bilinguals operate in monolingual or bilingual modes, with the degree of non-target language activation varying accordingly. In a monolingual mode, the non-target language is largely deactivated, mirroring monolingual speech patterns, whereas in a bilingual mode, both languages are activated to varying degrees, enabling phenomena like lexical borrowing and CS. This model also extends to trilingual speakers, allowing for monolingual, bilingual, or trilingual modes depending on the situational demands (Hoffmann & Stavans, 2007).

Despite these theoretical advances, psycholinguistic research on CS faces significant challenges. A major limitation is the reliance on controlled laboratory settings, which may fail to capture the naturalistic, interactional nature of CS (Grosjean, 2010). This raises concerns about the ecological validity of findings (Azuma, 1996). Additionally, much of the research focuses on speakers of standard or academic languages, potentially overlooking the diversity of CS practices in non-standard or regional varieties (Gardner-Chloros, 2009). Overcoming these issues requires more inclusive methodologies that reflect the real-world complexities of multilingual interactions.

In conclusion, psycholinguistic research has provided valuable insights into the cognitive mechanisms enabling CS, from language activation and inhibition to the role of context in shaping language use. Models such as the IC, ACH, and language mode offer complementary perspectives on these processes. By examining these models, this section highlights the cognitive demands of managing multiple languages.

2.4.3 CS from a sociolinguistic perspective

CS as a sociolinguistic phenomenon refers to the linguistic outcome of language contact, shaped by the social circumstances in which it occurs (Gardner-Chloros, 2009). From a sociolinguistic perspective, CS can be analyzed at two levels: the societal level and the individual level. Studies at the societal level often associate CS with contexts where a minority language interacts with a majority language, emphasizing its role in expressing social identity and resisting linguistic or cultural domination (e.g., Gal, 1988). This line of research also frequently addresses diglossia, where distinct varieties of the same language are used for specific functional purposes. In such

cases, language use is analyzed in relation to social networks (Wei et al., 1992), the relative prestige of the varieties, and their roles across different domains of life (Gardner-Chloros, 2009).

According to Wei (1998), Gumperz's (1982) work on CS and Myers-Scotton's (1983) Markedness Theory are two of the most influential models in sociolinguistics. Gumperz introduced the concepts of *we-code* and *they-code* to describe sociolinguistic dynamics in bilingual contexts. The *we-code* often represents the minority language, associated with informal, in-group relations and cultural identity, while the *they-code* typically corresponds to the majority language, linked to formal, out-group interactions and institutional settings. These two codes often coexist within a single linguistic event, with speakers strategically alternating between them to reflect social intentions and the symbolic associations of each language.

However, some researchers question the universality of the we-code/they-code distinction. Sebba and Wootton (1998) highlight cases where the we-code represents the majority language rather than the minority one. Swigart (1992) further critiques this framework, noting that it fails to explain instances where CS itself functions as a distinct linguistic variety. Similarly, Auer (2005) argues that CS is sometimes discourse-driven rather than identity-based, making it difficult to neatly categorize specific occurrences.

Myers-Scotton's (1995) Markedness Model takes a broader approach, aiming to comprehensively explain the various functions of CS (Gardner-Chloros, 2009). Drawing on theoretical frameworks such as Power and Solidarity (Brown & Gilman, 1968), Politeness Theory (Brown & Levinson, 1987), Speech Accommodation Theory (Giles & Coupland, 1991; Giles & Smith, 1979), and Conversational Principles (Grice, 1989), Myers-Scotton (1995) proposed that bilingual speakers strategically select linguistic forms based on social norms. These choices may align with unmarked, expected patterns to reinforce social relationships or deviate as marked choices to redefine social distance and renegotiate interactional dynamics.

Critiques of the Markedness Model further challenge its universality. Auer (1998) and Wei (1998) contrast it with the Conversation Analysis (CA) approach, which focuses on conversational moves to explain CS, independent of external social factors. Additionally, Gafaranga (2005) illustrates that the model struggles to account for communities where mixed-language use is the normative means of communication, rather than a deviation from it.

In conclusion, the exploration of CS as a sociolinguistic phenomenon reinforces its dual nature as both a reflection of societal structures and a tool for individual agency. Models such as

Gumperz's (1982) framework and Myers-Scotton's (1995) Markedness Model have provided foundational insights into the interplay between language choice, identity, and social norms. While these models have significantly shaped the field, critiques highlight their limitations in accounting for the fluidity and context-specific nature of CS, particularly in settings where linguistic boundaries are blurred or where CS functions as a linguistic norm. This challenges researchers to move beyond fixed dichotomies and generalized assumptions, embracing more dynamic and context-sensitive approaches.

As a final note, it is worth emphasizing that a comprehensive account of CS cannot be achieved without integrating findings from three major strands in the study of CS—the structural, the psycholinguistic, the sociolinguistic (Bullock & Toribio, 2009).

2.5 Factors correlating with or influencing CS

Studies on CS have been grouped into three main perspectives: structural, psycholinguistic, and sociolinguistic, as outlined in Section 2.4. Each perspective offers unique insights into the factors that correlate with or influence CS in terms of pattern (intersentential or intrasentential) and/or frequency (quantity).

Building on these perspectives, researchers have identified a wide range of factors that shape or are associated with CS. These include gender (Blom & Gumperz, 2000; Luomala, 2016; Poplack, 1980; Post, 2015; Schmid, 2014), the level of education (Sayahi, 2011), interlocutor, setting, and topic (Asali, 2011; Bentahila, 1983; Blom & Gumperz, 2000; Chan, 2019; Gardner-Chloros, 2009; Grosjean, 2007; Hoffmann & Stavans, 2007; Lawson & Sachdev, 2000; Panhwar, 2018; Post, 2015; Ritchie & Bhatia, 2006; Saville-Troike, 2003; Zentella, 1997), degree of formality of the conversation (Hoffmann, 1991; Hoffmann & Stavans, 2007; Panhwar, 2018; Sayahi, 2011), age of L2 acquisition (Deuchar et al. 2016; Poplack, 1980), age of the speaker (Bassam, 2018; Ennaji, 2005; Stockwell, 2007), community norms (Balam et al., 2020; Deuchar, 2020; Kroff et al., 2023), personality traits (Dewaele & Wei, 2014), metalinguistic awareness (Rodriguez-Fornells et al., 2012), social class (Ennaji, 2005; Labov, 1966; Milroy, 1987), language prestige (Muysken, 2000), lexical accessibility (Myslín & Levy, 2015), priming (Kootstra, 2015; Myslín & Levy, 2015), language-internal collocational strength between words (Backus, 2003), recency of use (Myslín & Levy, 2015), lack of equivalent words (Al-Ahdal, 2020; Rodriguez-Fornells et al., 2012), language interference (Giesbers, 1989), language preference (McClure,

1981; Schmid, 2014), typological similarity between the languages involved (Bokamba, 1989; Gardner-Chloros, 2009; Hoffmann & Stavans, 2007; Kootstra, 2015), the degree of language contact (Costa & Santesteban, 2004) and triggering (Kootstra et al., 2012; Rodriguez-Fornells et al., 2012).

However, it is important to note that findings on factors influencing CS vary significantly and are often shaped by contextual variables (Brown, 2020). For instance, gender is one such factor that has produced conflicting results across studies. Gardner-Chloros (2009) argues that "CS cannot be correlated in any direct way with gender, but intersects with a large number of intervening variables which are themselves connected with gender issues" (p. 82). Similarly, Cheshire and Gardner-Chloros (1998) report no significant relationship between gender and CS frequency in Greek Cypriot and Punjabi speech communities. In contrast, Poplack (1980), Treffers-Daller (1992), and Haust (1995) observed gender-related differences in their studies. Luomala (2016) found that in Morocco, the location of CS varied by the speaker's gender, reflecting sociocultural norms.

In addition to gender, education and social contact have also emerged as significant yet contested factors in CS studies. Sayahi (2011) noted that Tunisian Arabic-French CS was more common among university-educated individuals, with gender having little influence. Conversely, Rouchdy (2002) found that social contact was a stronger determinant of CS frequency than education level.

Given the complexity and interplay of these factors, Section 2.5 narrows its focus to the criteria used to identify participants most suitable for the present study. This narrowing ensures methodological clarity and aligns the current study with its research objectives.

According to Gertken et al. (2014), *language dominance*, defined as "which language is generally most accessible in day-to-day life, the language that is most highly activated, and can be the default language for speaking and thinking" (Harris et al., 2006, p. 264), is widely acknowledged in the literature as a significant factor influencing CS patterns and language choice. Gertken et al. (2014) identify language history, use, proficiency, and attitudes as the key components of the language dominance construct (p. 219). Similarly, Olson (2022) highlights that a bilingual's experience and engagement with CS significantly influence both linguistic and cognitive behaviours. Olson emphasizes that a comprehensive approach to a bilingual's CS profile

or experience should incorporate the key variables: CS history, use, proficiency, and attitudes (p. 9).

According to Olson (2023), the language history component addresses information such as the age of acquisition, the age at which bilinguals felt comfortable speaking each language, and the number of years spent in environments—such as school, region, family, or work—where each language is spoken. Previous research highlights the importance of this component in influencing CS. Age of acquisition, in particular, is recognized as a critical extralinguistic variable affecting the frequency and type of CS (Deuchar, 2020; Poplack, 1980). Deuchar (2020) found that speakers who acquired both Welsh and English from birth exhibited significantly more intraclausal CS than those who learned one language from birth and the other later in life. Similarly, Poplack (1980) observed that individuals born in the USA or who arrived during early childhood engaged in more frequent CS compared to those who immigrated as adults, due to the latter group's later acquisition of English.

The language use component addresses the proportion of time, on average, that bilinguals use each language in various contexts, such as with family, friends, at work, during self-talk, or when counting (Olson, 2023). According to Treffers-Daller (2019), language use can be divided into "how frequently bilinguals use their languages" and "how these are divided across domains" (p. 378). Previous research stresses the significance of this component in influencing CS behaviours, with a bilingual's CS experience being recognized as a crucial factor shaping linguistic outcomes (Birdsong et al., 2012; Kroff et al., 2023; Stavans & Porat, 2019). Heredia and Altarriba (2001, as cited in Myslín & Levy, 2015) suggest that multilingual speakers are more likely to use the language in which a given word has higher frequency. In other words, greater word frequency enhances lexical accessibility. This finding highlights a clear relationship between habitual CS and linguistic behavior, as speakers may naturally switch to the language that allows for easier or more efficient word retrieval.

The language proficiency component addresses bilinguals' abilities in each language across the four skills: speaking, listening, reading, and writing (Olson, 2023). According to Olson (2023), proficiency refers to "a bilingual's ability in each of their languages individually" (p. 3). The importance of proficiency as a factor influencing CS is well-established in the literature (e.g., Dewaele & Wei, 2014; Hoffmann & Stavans, 2007; Poplack, 1980; Post, 2015; Rodriguez-Fornells et al., 2012). Poplack (1980, as cited in Yim & Clément, 2021) observed that bilinguals

with greater language proficiency tended to prefer intrasentential switches, which are more complex than intersentential switches. Similarly, Dewaele and Wei (2014) found that participants with advanced proficiency in multiple languages reported significantly more frequent CS. Nortier (1990, as cited in Deuchar, 2020), in a study of Dutch-Moroccan Arabic CS, reported that speakers with high proficiency in both languages produced a higher proportion of intraclausal CS compared to those with lower proficiency. Post (2015) quantitatively examined Arabic-French CS among young adult speakers of Moroccan Colloquial Arabic (MCA) in spoken and written communication. Post's findings revealed notable differences in the types of French constituents used across communication modes, influenced by speakers' varying levels of French proficiency.

Finally, the language attitude component examines how much bilinguals feel like themselves when speaking each language, their degree of identification with the cultures associated with each language, the importance they place on achieving native-like fluency, and their desire to be perceived as native speakers (Olson, 2023). The significance of this component in influencing CS practices, as highlighted by Olson (2023), is consistent with findings from previous research (e.g., Al-Ahdal, 2020; Dewaele & Wei, 2014; Muysken, 2000; Parafita Couto et al., 2015; Ritchie & Bhatia, 2006). Dewaele and Wei (2014) observed that participants with more positive attitudes toward CS reported using it more frequently across a wide range of interlocutors. Similarly, Post (2015) reported that a positive attitude toward French and MCA-French CS had a highly significant impact on the rate of French usage in spoken conversations.

However, two critical points deserve attention. First, research does not consistently prove a relationship between positive attitudes and CS. For example, Chana and Romaine (1984, as cited in Dewaele & Wei, 2014) found that Punjabi–English bilinguals in Birmingham held negative attitudes toward CS, despite relying on it as their primary mode of communication. This suggests that bilinguals may engage in CS even when they perceive it negatively. Similarly, Pena (2004, as cited in Dewaele & Wei, 2014) found that while first-generation Spanish-English bilinguals often viewed CS as a sign of linguistic deficiency, second-generation speakers embraced it as a natural and efficient communication strategy. These findings illustrate that negative attitudes do not necessarily prevent its use.

Second, Yim and Clément (2021) argue that "attitudes toward code-switching may, however, need to be considered separately from attitudes toward individual languages" (p. 1371). This suggests that attitudes toward CS are distinct, as they reflect an appreciation of the interplay

between languages rather than a mere combination of attitudes toward each language individually. For instance, in the Hong Kong context, while Cantonese and English are both highly valued and hold significant social status, the act of CS between them is often viewed negatively, with the resulting speech perceived as inferior (Gibbons, 1987, as cited in Yim & Clément, 2021).

In summary, the factors influencing or correlating with CS are multifaceted and often interdependent, spanning structural, psycholinguistic, and sociolinguistic domains. These factors not only highlight the complexity of CS behavior but also emphasize the importance of examining its occurrence within specific contexts.

2.6 CS in trilinguals

According to Parafita Couto et al. (2023), previous research on multilingual CS has primarily been grounded in sociolinguistics, education, acquisition, and grammar, explored to a lesser extent. These studies collectively showcase the multifaceted nature of CS, offering insights from different disciplinary lenses into its social, educational, developmental, and structural dimensions. This section presents studies from each of these fields to illustrate their contributions to understanding the phenomenon.

One example of sociolinguistic research on multilingual CS is Chan's (2019) study on trilingual CS in Hong Kong, which builds on earlier work by Chan (2018). The study investigates the phenomenon of trilingual CS among Cantonese, English, and Putonghua speakers in Hong Kong. While previous research primarily focused on bilingual CS between Cantonese and English, Chan's (2018) ethnolinguistic findings suggested the emergence of trilingual CS due to increased contact with Mainland China and the integration of Putonghua into the school curriculum. The 2019 follow-up study employed mixed methods, collecting quantitative and qualitative data through an online survey of 60 university students who had lived in Hong Kong for over 15 years and spoke all three languages at an intermediate level or higher.

The findings confirmed the existence of trilingual CS in Hong Kong. However, the results indicate that it remains in its early stages, with only 33.3% of participants reporting its use, compared to the widespread adoption of pure codes (62%) and bilingual CS (100%). Importantly, the contexts in which trilingual CS occurs differ significantly from those of pure codes and bilingual CS.

Participants reported using bilingual CS almost exclusively in informal settings, such as communication with friends and family, while pure codes were predominantly reserved for formal contexts, such as workplace meetings or academic presentations (72.3%). Interestingly, some participants indicated flexibility in their linguistic choices, using pure codes (25.5%) and bilingual CS (26.7%) in both formal and informal situations.

Notably, none of the participants reported using trilingual CS in formal contexts; it was exclusively associated with informal settings, particularly in school-related interactions. This highlights the distinctive nature of trilingual CS as an emerging phenomenon within Hong Kong's multilingual landscape. This study also highlights how sociopolitical and educational changes influence the adoption of CS practices, reflecting broader societal shifts.

Another sociolinguistic perspective is offered by Konidaris (2010), who conducted a case study on CS among three trilingual speakers of English, French, and Greek living in Montreal. Situated in a bilingual city shaped by multiculturalism and governed by complex language policies, the study explored whether CS occurred among trilinguals and, if so, under what conditions. Based on audio-recorded and transcribed informal discussions, the findings revealed that language choice was closely tied to conversational topic. English dominated as the default code across all discussions, while French was selectively used in socio-political and professional contexts. Greek emerged primarily in discussions related to family, food, religion, and Greek heritage. The study combined macro (quantitative) and micro (qualitative) analyses to demonstrate how topic-driven shifts reflect strategic, culturally embedded CS practices. These results illustrate how trilingual speakers draw on their full linguistic repertoires to align with social contexts, negotiate identity, and manage multilingual interaction. Together with Chan's (2019) study, this studt highlights how sociopolitical environments and conversational footing influence the distribution and functions of CS in trilingual communities.

Research in the field of education offers valuable insights into how CS functions as a pedagogical tool and shapes learning environments. Leonet et al.'s (2017) study on translanguaging in a trilingual school in the Basque Country provides an educational lens, demonstrating how CS can support both language learning and the maintenance of minority languages. Translanguaging, defined as "planned instructional strategies used with a pedagogical purpose, allowing multilingual students to use the resources in their linguistic repertoire to develop competences in different languages" (Leonet et al., 2017, p. 219), was central to this study.

The researchers examined how translanguaging could support the use of Basque, a minority language, alongside Spanish and English in an educational setting. They conducted a pedagogical intervention in a Basque-medium primary school, where students engaged in activities that intentionally integrated their linguistic repertoire across the three languages.

The intervention aimed to develop language and metalinguistic awareness while promoting Basque as the main language of instruction. Findings showed that translanguaging pedagogies enhanced students' understanding of linguistic connections without undermining the minority language. Teachers reported that the intervention supported the prestige of Basque by placing it on equal footing with Spanish and English, even in contexts where Basque traditionally held less social prominence. However, concerns remained about the need to reinforce Basque due to its minority status in broader society.

This study stresses the potential of translanguaging practices to bridge linguistic and social inequalities in multilingual classrooms, highlighting how educational strategies can foster the maintenance and revitalization of minority languages.

Studies in the field of acquisition explore how multilingual speakers develop and manage their linguistic repertoires. Hoffmann and Stavans (2007) investigated the evolution of trilingual CS from infancy to school age, focusing on how dynamic language dominance shapes trilingual competence. The study analyzed the linguistic output of two siblings raised trilingually (Spanish, Hebrew, and English) in naturalistic and experimental settings. Data were collected at two stages: early childhood (ages 3 and 6) and later childhood (ages 6 and 9), examining both formal and functional aspects of their CS and CM.

Findings revealed a developmental trajectory in trilingual CS. Younger children produced fewer switches and relied more on intersentential CS, while older children demonstrated an increased use of intrasentential CM, reflecting greater linguistic sophistication and metalinguistic awareness. The children's language dominance shifted over time, influenced by sociolinguistic factors such as family language practices, exposure, and context. English, the dominant language in early childhood, gave way to a more balanced use of all three languages by school age.

These findings highlight the interplay of cognitive and sociolinguistic factors in the development of trilingual competence, offering insights into the structural and functional aspects of trilingual CS and its role in shaping multilingual communication strategies. They also suggest

that balanced exposure to multiple languages from an early age fosters both linguistic competence and cognitive flexibility.

Research on grammar examines the structural mechanisms that underpin CS practices. Stell and Parafita Couto's (2012) study provides a detailed grammatical analysis of CS practices within Luxembourg's Portuguese-speaking community. Situated in a trilingual environment of Luxembourgish, French, and Portuguese, the study compares the CS behaviours of native Luxembourgish speakers and Portuguese immigrants. Using Muysken's (2000) typology, the researchers examined structural patterns—insertion, alternation, and congruent lexicalization—within in-group communication.

The findings revealed distinct patterns: Luxembourgish speakers predominantly used insertional switching, while Portuguese speakers demonstrated a mix of insertional and alternational switching, influenced by their integration into Luxembourg's multilingual society. Notably, Luxembourgish clauses were more prone to lexical insertions than French or Portuguese clauses, highlighting Luxembourgish's unique position as both a low-status yet flexible ML.

This study emphasizes the role of grammatical constraints in shaping CS practices, illustrating how language hierarchies and typological similarities influence multilingual interactions in immigrant communities.

In conclusion, the studies reviewed in this section collectively reinforce the complexity and diversity of multilingual CS across different fields. Sociolinguistic research, as seen in Chan's (2019) work, highlights the societal and cultural factors influencing the emergence of CS. Educational studies, such as Leonet et al. (2017), illustrate the pedagogical potential of translanguaging in fostering linguistic equity and minority language maintenance. Acquisition research, exemplified by Hoffmann and Stavans (2007), reveals how CS evolves dynamically in response to cognitive and social factors, reflecting the developmental trajectories of trilingual speakers. Finally, grammar-focused studies, such as Stell and Parafita Couto's (2012), demonstrate the structural mechanisms underpinning CS and its sensitivity to typological and social hierarchies.

2.7 Functions of CS

One of the main objectives of this study is to explore the functions of CS among trilingual speakers, making it essential to review the various functions identified in the literature. Numerous scholars have contributed significantly to this area of research, including Appel and Muysken (2005), Auer

(1984, 2000), Baker (2006), Chaiwichian (2007), Gumperz (1982), Halmari (1997), Hoffmann (1991), Koziol (2000), Malik (1994), Milroy (1987), Myers-Scotton (1995), Panhwar (2018), Poplack (1980), Romaine (1995), Sebba and Wootton (1998), and Wei (1994), among others. However, to effectively contextualize the findings of this study, special emphasis is placed on those works offering the most relevant insights. In what follows, a list of key functions of CS documented in these works is presented.

2.7.1 Highlighting information

Myslín and Levy (2015) offer a novel discourse-functional perspective on CS, suggesting that less predictable, high-information-content meanings are often encoded in one language, while more predictable, lower-information-content meanings are conveyed in another. They argue that switching to a less frequently used language highlights meanings with a higher cognitive load, requiring more attention from listeners. Through their analysis of Czech-English bilingual discourse, the authors demonstrate that CS can serve as a tool to mark important or unpredictable information. Their findings suggest that, when multiple languages are available, switches to a speaker's less frequent language make information more salient, guiding the listener to focus on novel or significant elements in the discourse. Moreover, their study focuses on cases where switching occurs between near-equivalent alternatives, eliminating factors such as differences in language proficiency or meaning. In such contexts, the language choice is purely a discourse function used to manage the flow of information (Myslín & Levy, 2015).

This perspective aligns with Zhang et al. (2006), who explore the role of focus and contrast in discourse. They argue that focus involves introducing pragmatically and semantically new information, which speakers often highlight through prosodic markers such as pitch accent. Similar to Myslín and Levy (2015), Zhang et al. (2006) emphasize how speakers strategically mark novel information in discourse, though they focus on prosody rather than language switching. While Zhang et al. (2006) do not explicitly discuss CS as a mechanism for signalling focus or contrast, their findings could extend to CS when considering the notion of *contextualization cues* (Gumperz, 1982). Gumperz (1996) defines contextualization cues as "verbal and non-verbal metalinguistic signs that serve to retrieve the context-bound presuppositions in terms of which component messages are interpreted" (p. 379). Scholars like Auer (1984) and Wei (1994) argue that CS can function as a form of contextualization cue, much like intonation, prosody, gestures, and silence,

all of which are available to both monolinguals and bilinguals. Bilinguals, however, have the added resource of CS. Thus, CS can act as both a verbal and non-verbal contextualization cue, aligning closely with how prosodic markers such as pitch accent function in Zhang et al.'s (2006) analysis of focus and contrast. Together, these studies illustrate that CS serves as a tool that multilingual speakers use to highlight important information and guide their interlocutors' attention to the most relevant parts of the discourse.

2.7.2 Marking identity

Another prominent function of CS is its role in marking sociocultural identities. Chan (2019) highlights that bilingual CS between Cantonese and English in Hong Kong not only facilitates communication but also serves as a key marker of Hongkonger identity, distinguishing them from mainland Chinese. Through this linguistic practice, CS reinforces Hongkongers' sense of identity and sets them apart as a distinct group (Chan, 2019).

The sociocultural function of CS is further exemplified in Brown's (2020) observations from the Maghreb, where speakers frequently switch to French to reflect social status or education, particularly in diglossic contexts like Morocco and Tunisia. The prestige associated with French in these societies illustrates how CS functions as a marker of social and educational identity, as well as group membership (Brown, 2020).

2.7.3 Filling lexical gaps

CS is often motivated by lexical need, particularly when one language lacks an equivalent term for a specific concept. As Backus (2015) points out, insertional CS is typically driven by the need to fill such gaps, especially when the base language does not provide a sufficiently precise term. According to Brown (2020), this phenomenon is common in multilingual contexts like the Maghreb, where French is frequently employed for scientific terminology due to its precision and appropriateness in technical discussions. Similarly, Bouzemmi (2005) notes that Tunisian speakers often switch to French during scientific or technical conversations, which not only facilitates communication efficiency but also ensures semantic accuracy in discussions involving complex or specialized subjects.

Stavans (1992) introduces the concept of culturally-bound switches, where trilingual children in her study alternated between languages to express terms with significant cultural

connotations that could not be fully translated into other languages. For instance, Hebrew terms such as *shabat* carry religious and cultural meanings that extend beyond their lexical equivalents in English or Spanish (Stavans, 1992, p. 44). This demonstrates that CS not only serves a linguistic need but also plays a role in conveying culturally embedded meanings that are often untranslatable, further filling an important gap in communication.

In the Tunisian context, Sayahi (2011) observes that the diglossic environment, coupled with bilingual education, leads to frequent CS at the nominal level. Speakers often switch to French when discussing topics related to work or studies, as technical terms are not readily available in Tunisian Arabic. Equivalent terms in MSA are often "inadequate" for the specific context of these conversations, particularly in school subjects, grading systems, and administrative matters (Sayahi, 2011, p. 125).

2.7.4 Creating emotional distance

Another important function of CS is managing emotions. Dewaele (2015) explains that switching to a second language (LX) allows speakers to "overcome social constraints" and express emotions more freely, such as when swearing (p. 9). Additionally, recalling emotionally significant memories in an LX can reduce their emotional intensity, providing emotional detachment when discussing traumatic experiences, such as torture or rape. In this way, CS serves as a coping mechanism for dealing with emotionally charged or painful experiences (Dewaele, 2015).

This function is further supported by Altarriba and Morier (2006), who suggest that bilinguals often switch to their L2 when discussing traumatic or sensitive topics. Using the L2 reduces the emotional intensity of the subject matter, making it easier for speakers to engage in difficult conversations. They also note that emotionally charged memories tend to be more vivid when recalled in the language in which they were originally experienced, but switching languages can help provide the necessary emotional distance to communicate traumatic events more comfortably (Altarriba & Morier, 2006).

2.7.5 Marking authority and formality

CS can also be used to assert authority or signal formality in specific social contexts. Amuzu (2015) highlights how Ghanaian bilinguals switch to English in emotionally charged situations to assert authority. For example, in family interactions, English is often used to express seriousness

and authority due to its association with formality and education in Ghana. This illustrates how CS can serve as a marked linguistic choice, reflecting social hierarchies or emotional intensity within interactions (Amuzu, 2015).

2.7.6 No function

Finally, according to Backus (2015), CS can sometimes occur without a clear functional purpose when considered through the lens of *entrenchment*. Backus (2015) explains that the repeated use of certain linguistic structures can lead to their automatic selection, even without conscious intent. Over time, frequently used phrases or words become so entrenched in a speaker's mental lexicon that their use becomes habitual. In this context, CS may not always serve a specific linguistic or pragmatic function, such as filling lexical gaps or conveying a social message. Instead, it can occur simply because the foreign term or expression has become automatically retrieved during speech due to frequent past usage (Backus, 2015).

In conclusion, this section has outlined key functions of CS as documented in the literature. Each function contributes to the communicative and social objectives of bilingual and trilingual speakers, demonstrating that CS is not merely a linguistic tool but a deliberate and meaningful practice shaped by factors such as context, identity, and interactional needs.

2.8 Qualitative research approaches and frameworks

Qualitative methodologies are not a single, unified research approach but rather encompass a diverse range of epistemological perspectives and methods that enable researchers to design studies, collect, and analyse data in subtle ways (Vaismoradi et al., 2013). Although diverse, these methodologies share the same goal of understanding phenomena from the perspective of those experiencing them. According to Vaismoradi et al. (2013), despite variations in specific methods, procedures, and techniques, there is considerable overlap, creating a "family" of approaches united by shared epistemological, ethical, and procedural concerns (p. 398). This conceptualization positions qualitative research as a flexible, pluralistic domain, where the commonalities among different approaches are often considered more significant than their differences (Vaismoradi et al., 2013).

This section discusses some novel descriptive qualitative approaches to data analysis, including content analysis, the usage-based approach and frame semantics from Cognitive

Linguistics, and the analytical tools provided by CL. Each of these approaches offers a unique lens through which to view and interpret data, ultimately contributing to a comprehensive understanding of the phenomena under investigation.

Content analysis offers a systematic approach to data analysis, enabling researchers to gain deep insights into the meanings and interpretations embedded within descriptive data (Hsieh & Shannon, 2005). This method involves coding and categorizing textual information to identify meaningful units, themes, and categories without relying on preconceived theories or predetermined codes (Graneheim & Lundman, 2004). By allowing themes and categories to emerge directly from the data, qualitative content analysis provides a flexible and exploratory approach, making it particularly effective for understanding concepts from participants' perspectives, especially in contexts where existing theories are limited (Manivannan & Maruthy, 2024, p. 426).

A key advantage of content analysis is its dual capacity to qualitatively interpret data while also quantifying it by measuring the frequency of various categories and themes, thus uncovering significant patterns within the text (Vaismoradi et al., 2013). This approach treats data not as mere representations of physical events but as texts, images, and expressions intended to be read, interpreted, and acted upon for their contextual meanings (Krippendorff, 2004, as cited in Vaismoradi et al., 2013, p. 401). Consequently, data must be analyzed with careful consideration of these interpretative and contextual aspects.

When conducting content analysis, researchers must decide whether to focus on manifest content—what is directly observable—or latent content, which involves more abstract interpretations (Graneheim & Lundman, 2004). Although content analysis is often considered a foundational methodology, this does not imply that it yields simplistic or low-quality results. It is essential for researchers to adopt a reflective approach, continually re-examining the data from multiple perspectives and strictly following the stages of analysis to uncover underlying themes and categories that may not be immediately apparent (Vaismoradi et al., 2013).

According to Geeraerts (2006), the cognitive linguistic approach to language views it "as an instrument for organizing, processing, and conveying information – as something primarily semantic, in other words" (p. 3). Geeraerts (2006) identifies four distinctive characteristics of how Cognitive Linguistics approaches meaning. First, linguistic meaning is "perspectival," reflecting different ways of interpreting the same objective situation based on varying viewpoints.

Importantly, there is always a perspective to be detected, emphasizing that meaning is shaped by the observer's interpretative framework. Second, it is "dynamic and flexible," evolving with usage and context rather than being fixed. Third, it is "encyclopedic and non-autonomous," integrating with our broader knowledge and cultural identities rather than existing in isolation. Finally, it is anchored in "usage and experience," meaning that linguistic meaning is grounded in actual language use and experiences rather than being abstract (pp. 4–5).

Building on these principles, the usage-based approach, as outlined by Diessel (2017), provides a valuable perspective within Cognitive Linguistics. This approach is anchored in the idea that language is "a dynamic network in which the various aspects of a language user's linguistic knowledge are constantly restructured and reorganized under the continuous pressure of performance" (Diessel, 2017, p. 2). According to Diessel (2017), usage-based linguists agree that language use involves a broad range of cognitive and social processes, which can be categorized into three general domains: social cognition, conceptualization, and memory and processing (p. 8). Of particular relevance to the present study is the domain of conceptualization, which concerns the construction of meaning. Diessel (2017) states that "in the usage-based approach, semantics is shaped by conceptualization, which is the cognitive structuring of experience" (p. 10).

Frame semantics is another valuable approach within Cognitive Linguistics. Developed by Charles J. Fillmore, it interprets word meanings through conceptual structures known as "frames" (Fillmore, 2006). A frame is a network of related concepts, where understanding one element requires knowledge of the entire system. Semantic elements are viewed not in isolation but as part of interconnected networks, each linked with other concepts, forming a dynamic web of meanings. Unlike formal semantics, which often isolates language from experience, frame semantics sees words as reflecting a community's way of categorizing its experiences and using language. For instance, understanding the meaning of the verb "buy" involves recognizing and recalling the commercial transaction frame, including roles like "buyer," "seller," "goods," and "money." This approach highlights that words evoke specific contexts, shaping interpretation and communication. It illustrates that meanings are not isolated entities but are interconnected with shared cultural knowledge and practices. For example, terms like "accuse" or "criticize" derive their meaning from a judgmental scenario that includes roles such as "judge" and "defendant." Overall, frame semantics offers a comprehensive framework for analyzing language, revealing how words express complex ideas within specific social and experiential settings (Fillmore, 2006).

CL emphasizes that its research centers on the dynamic interaction between language, culture, and conceptualization, with *cultural conceptualizations* defined as " a broad and diverse category involving various manifestations of human cognition in the forms of cultural schemas, categories, and metaphors" (Baranyiné Kóczy, 2024, pp. 626–627). CL builds on the work of earlier scholars, such as Wilhelm von Humboldt, Franz Boas, Edward Sapir, and Benjamin Whorf, who laid the groundwork for understanding how cultural ideas shape language. In contrast to the majority of Cognitive Linguistics studies, which have focused on universal mental processes rather than cultural meaning, CL highlights how cultural factors shape our experiences and the way we use language (Sharifian, 2011). Farzad Sharifian has been a key contributor to the field of CL. His model of cultural conceptualizations (2011, 2017) provides a framework for understanding how language and *cultural thinking* (i.e., culturally constructed conceptualizations) are interconnected. Sharifian suggests that cognition is shared across a community, emerging from collective interactions over time. Drawing on ideas from cognitive anthropology and complexity science, he argues that cultural knowledge is distributed unevenly among individuals rather than being identical for everyone.

His framework highlights three primary ways in which cultural knowledge is embedded and expressed through language: cultural schemas, categories, and metaphors. Cultural schemas refer to shared beliefs, norms, and expectations of behavior that guide individuals in interpreting their experiences. For example, "event schemas (e.g., CHRISTMAS), emotion schemas (e.g., SHAME or ANGER), and role schemas (e.g., gender roles)" shape how members of a cultural community understand the world (Baranyiné Kóczy, 2024, p. 628). Cultural categories are conceptual groupings, such as kinship terms or event classifications, that are culturally constructed and reflected in language. These categories can also emerge from the conceptualization of body parts, often carrying extended cultural associations (Baranyiné Kóczy, 2024). Lastly, cultural metaphors are conceptual constructions based on cross-domain mappings that reflect cultural schemas, such as those related to folk medicine or worldviews (Baranyiné Kóczy, 2024).

Together, cultural schemas, categories, and metaphors illustrate how communities communicate and make sense of their shared realities, providing insight into the interplay between language and cultural cognition.

2.9 Intercoder reliability

O'Connor and Joffe (2020) describe ICR as "a numerical measure of the agreement between different coders regarding how the same data should be coded" (p. 2). While some critics argue that ICR may not be entirely compatible with the interpretative objectives of qualitative research, it provides several benefits, such as improving "the systematicity, communicability, and transparency of the coding process" (p. 1) and enhancing the credibility of the research for a broader audience. ICR is a widely used measure in content analysis to enhance the reliability of the approach (Cavanagh, 1997, as cited in Vaismoradi et al., 2013, p. 403). The main motivation for implementing ICR is to establish the accuracy and coherence of the coding framework and its consistent use across the data set (Hruschka et al., 2004; Joffe & Yardley, 2003; MacPhail et al., 2016; Mays & Pope, 1995, as cited in O'Connor & Joffe, 2020). Achieving high ICR demonstrates that the coding scheme can be consistently applied by various researchers, thereby ensuring the reliability and transparency of the analysis.

Furthermore, although qualitative research places importance on the researcher's interpretation of the data, its ultimate goal is to convey meaningful findings to others (Yardley, 2008, as cited in O'Connor & Joffe, 2020). ICR supports this goal by showing that the coding framework reflects a shared understanding that goes beyond an individual's perspective. In other words, obtaining acceptable ICR does not imply that the data holds a single, definitive meaning, which is a frequent concern raised by critics (Braun & Clarke, 2013, as cited in O'Connor & Joffe, 2020). Rather, it demonstrates that a team of coders working within a common framework can achieve a shared interpretation of the data. According to Potter and Levine-Donnerstein (1999), when multiple coders independently reach the same conclusions, it suggests that "the patterns in the latent content must be fairly robust and that if the readers themselves were to code the same content, they too would make the same judgments" (p. 266, as cited in O'Connor & Joffe, 2020). Conducting an ICR assessment ensures that different coders can engage with and add to the analytic process, providing confidence that the analysis represents a broader consensus rather than just one individual's viewpoint (Kurasaki, 2000, as cited in O'Connor & Joffe, 2020). This makes ICR a critical tool for preserving accuracy and consistency in coding, ultimately enhancing the credibility and effectiveness of the research findings (O'Connor & Joffe, 2020).

CHAPTER 3
METHODOLOGY

Overview

This chapter outlines the research methodology adopted in this study. It begins with a discussion of the research design, followed by an overview of the research context. Details on participant selection, data collection procedures, and tools are then presented, ensuring alignment with the study's objectives. The chapter concludes by detailing the data analysis process, which integrates both qualitative and quantitative methods to address the research questions.

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

Aligning with the research questions and overall study objectives, the qualitative research design is not only appropriate but essential for this study. Although the second research question requires quantitative analysis, this quantitative analysis is intended to complement the qualitative findings, providing a more detailed understanding of the roles CS plays in trilingual communication among the participants. Tashakkori and Teddlie (1998) emphasize that "the best method is the one that answers the research question(s) most efficiently" (p. 167).

The qualitative nature of this study is further justified by the growing recognition that "almost every aspect of language acquisition and use is determined or significantly shaped by social, cultural, and situational factors, and qualitative research is ideal for providing insights into such contextual conditions and influences" (Dörnyei, 2007, p. 36). Qualitative methodologies are particularly well-suited to this study due to their commitment to achieving a comprehensive understanding of the phenomena under investigation, prioritizing the perspectives of participants, and ensuring that inquiries are conducted with minimal disruption to the natural context of the phenomenon, as emphasized by Vaismoradi et al. (2013). This approach enables a thorough

examination of the participants' CS practices, allowing the researcher to identify and understand the complex motivations driving these practices.

In conclusion, the qualitative research design is not only appropriate but essential for this study. By employing methods that generate rich, non-numerical data—audio recordings and metalinguistic interviews—the study is able to explore trilingual CS in a way that is sensitive to the social, cultural, and situational factors that shape language use. This approach ensures that the study's findings are comprehensive, offering in-depth insights into the functions of CS among MA-French-English speakers.

3.2 Context of the research

To ensure that the data collected would effectively address the research questions, it was first necessary to decide on participants who were qualified for the study (Nortier, 2008). This decision was guided by factors established in the literature as correlating with or influencing CS, as detailed in Section 2.5. It is noteworthy that despite the common practice of qualitative research requiring a smaller sample size to achieve data saturation and depth (Dörnyei, 2007, p. 127), the researcher aimed for a sample size of 25–30 participants. This sample size was deemed sufficient to capture a substantial number of CS occurrences, provide clearer and more solid general observations, and facilitate meaningful comparisons among groups in terms of their CS behavior, thereby enhancing the reliability of the findings.

The next step was to determine the most appropriate type of data to be collected. Research shows that many language-contact phenomena, including CS, are most likely to occur in informal interactions among in-group members (Tokowicz & Warren, 2008). Moreover, bilingual data is typically produced in spontaneous situations involving multiple speakers (Turell & Moyer, 2008). For this reason, most CS studies focus on analyzing language use in spontaneous conversations, where CS occurs naturally (Nortier, 2008). Therefore, a decision was made to gather sufficient samples of natural-language use in order to create a corpus that is as representative as possible of the phenomenon being studied (Tokowicz & Warren, 2008). However, the researcher decided to collect semi-spontaneous data by directing the topics of conversation (Kroll et al., 2008; Nortier, 2008). As Nortier (2008) points out, both spontaneous and semi-spontaneous conversations are effective for studying CS. Importantly, this approach does not compromise the naturalness of the data collected. When participants are engaged in familiar and relevant topics, they focus more on

content than form, resulting in more natural language use (Nortier, 2008). Moreover, this approach helps mitigate the risk that participants might not engage in CS, especially when they are unaware that multilingual language use is the focus of the research (Nortier, 2008). Furthermore, providing specific topics also helps prevent long silences and maintains the flow of conversation (Nortier, 2008). Finally, selecting topics that resonate with participants can facilitate language alternation (Codó, 2008). Accordingly, the researcher and the supervisor carefully selected elicitation topics that should be engaging and relevant to the participants (Codó, 2008; Nortier, 2008). These topics were also general in nature to avoid speaking dysfluency, which can be triggered by anxiety related to the conversation topic (Pavlenko, 2008).

As a final point, as emphasized by Nortier (2008), for conversations to be more informal, participants need to be at ease and familiar with each other's linguistic behavior. Wardhaugh (2006) supports this, suggesting that natural conversational data is more easily obtained among acquaintances than strangers, thus enhancing the validity of the study's findings by reflecting genuine language use in social interactions. Consequently, participants chose the settings for recording conversations, ensuring they were in comfortable and familiar environments (see Table 3.1). Moreover, all participants within each group knew each other before the study, which encouraged more natural behavior during recordings.

3.3 Participants and sampling procedures

The sampling procedure for this study began with leveraging personal networks by approaching friends and colleagues residing in the same dormitory who were potential participants. These individuals were subsequently asked to recommend additional participants, utilizing a snowball sampling technique to extend the participant pool.

In addition to personal referrals, online platforms were employed to reach a broader audience. Specifically, Facebook groups dedicated to Maghreb Arabs in Hungary were utilized, including Tunisian Students Hungary (3.2k members), Stipendium Hungaricum Morocco (5.5k members), and Algerians in Hungary (5.8k members), with membership numbers current at the time of data collection. Announcements soliciting participants were posted, and those who expressed interest were contacted privately via Facebook. These respondents were also invited to recommend further participants, thereby continuing the snowball sampling process. This approach

resulted in a diverse participant pool encompassing various nationalities and universities across Hungary.

A deliberate choice was made to conduct in-person meetings rather than distributing the questionnaire online. This decision was based on two goals: first, to establish rapport with the participants, which was expected to facilitate more authentic behavior during the recording sessions; and second, as emphasized by Dörnyei (2007), to encourage participants to complete the questionnaire fully and ensure that no information was omitted. It is important to highlight that the participants chose the settings for completing the questionnaires, ensuring they were in comfortable and familiar environments. This strategy aimed to reduce status-related stress that could influence their responses, thereby ensuring more authentic data on CS use. As Lawson and Sachdev (2000) note, self-reports collected in evaluative settings, such as by a teacher at university, can lead to underreporting of non-standard or lower-status language varieties. After analyzing the data from the questionnaires, participants who met the study's criteria were contacted again to arrange convenient times and locations for the recording sessions.

This study ultimately included 29 participants divided between eight groups (see Table 3.1). The number of participants in each group was predetermined as part of a conscious and deliberate decision by the researcher. Medium-sized groups of up to five participants each were aimed for to ensure that all members could actively engage in the discussion. This group size was also aimed for to facilitate the identification of each speaker's voice, making the transcription process more manageable. Additionally, participants were intentionally selected from different universities and disciplinary backgrounds. This approach follows the principles of purposeful sampling, which aim to capture maximum variation in the phenomenon under study (Palinkas et al., 2015). For the sake of privacy, pseudonyms are used to replace real names.

Table 3.1

Overview of audio recordings

Title	Date	Length (Minute)	Participant	Gender	Nationality	University	Setting
Recording 1	23/11/2023	36:11	Amanda	F	Tunis	PE	Researcher's private room (University hostel)
			Maria	F	Morocco	PE	
			Dania	F	Algeria	PE	
			John	M	Morocco	PE	
Recording 2	2/12/2023	36:59	Amir	M	Morocco	PE	Researcher's private room (University hostel)
			Salim	M	Tunis	PE	
			Dania	F	Algeria	PE	

			Zack	M	Morocco	PE	
Recording 3	16/12/2023	39:40	Yaser	M	Morocco	PE	Researcher's private room (University hostel)
			Angela	F	Tunis	PE	
			Rose	F	Algeria	PE	
Recording 4	25/12/2023	30:25	Hana	F	Tunis	BCE	Public space
			Faith	F	Tunis	BCE	
Recording 5	8/1/2024	35:22	Madlin	F	Tunis	MATE	Public space
			Rinad	F	Tunis	MATE	
			Manal	F	Tunis	MATE	
			Shaher	M	Tunis	MATE	
Recording 6	9/1/2024	53:36	Rashed	M	Tunis	DE	Public space
			Gabriel	M	Tunis	DE	
			Danial	M	Tunis	DE	
Recording 7	23/2/2024	31:14	Gloria	F	Tunis	ELTE	Classroom on campus
			Indiana	F	Tunis	ELTE	
			Mary	F	Tunis	ELTE	
			Radwan	M	Algeria	ELTE	
			Kinda	F	Tunis	DE	
Recording 8	18/3/2024	43:44	Iman	F	Tunis	BCE	A participant's apartment
			Rawan	F	Tunis	BCE	
			Hanan	F	Tunis	ELTE	
			Dina	F	Tunis	ELTE	
			Soufia	F	Tunis	DE	

Note. F = Female; M = Male; PE = University of Pannonia; BCE = Corvinus University of Budapest; MATE = Hungarian University of Agriculture and Life Sciences; DE = University of Debrecen; ELTE = Eötvös Loránd University

3.3.1 Biographical information

This study is based on a sample of 29 participants. No participant was born or lived abroad. Additionally, all of the participants had native Arabic speaker parents. Participants were distributed across eight recording groups with percentages as follows: 13.3% in recordings 1, 2, and 5; 10.0% in recordings 3 and 6; 6.7% in recording 4; and 16.7% in recordings 7 and 8. In terms of gender, 66.7% were female and 33.3% were male. They had a mean of 24.20 (SD = 2.92) years, ranging from 20 to 29. Most participants were born in Tunisia (70.0%), followed by Morocco (16.7%) and Algeria (13.3%). Their nationalities mirrored this distribution, with the same percentages for Tunisian, Moroccan, and Algerian identities. Similarly, the nationalities of their parents were consistent with the participants' own. Participants resided in Budapest (36.7%),

Veszprém (36.7%), Debrecen (13.3%), and Gödöllő (13.3%). The majority were MA students (40.0%), followed by PhD (26.7%), BA and BSc (each 10.0%), and MSc (10.0%). The majors of participants were diverse, with the most common being computer science (13.3%), applied linguistics (10.0%), and marketing (10.0%). Other fields included business development, environmental engineering, finance, international relations, legal studies, literary and cultural studies, multilingualism, sociology and communication science, tourism and catering, and English studies, each representing smaller percentages of the sample.

3.3.2 Language history

The language history construct in the questionnaire was comprised of a total of 6 questions. The descriptive statistics for the Arabic language learning experiences are presented in Table 3.2 (see Section 3.4.2.1 for details on the scoring procedure for each module). All of the participants reported starting to learn Arabic at birth. They also felt comfortable using the language as early as they could remember. The participants had an average of 12.80 years (SD = 2.54) of formal classes in Arabic. The time spent in a country or region where Arabic is spoken averaged 19.87 years (SD = 0.51). Similarly, the time spent in a family environment where Arabic is spoken averaged 19.80 years (SD = 0.55). Participants spent an average of 1.03 years (SD = 1.75) in a work environment where Arabic was spoken.

Table 3.2

Language history for the Arabic language

	Arabic language			
	M	**SD**	**Min**	**Max**
At what age did you start learning the following languages?	0.00	0.000	0	0
At what age did you start to feel comfortable using the language?	0.00	0.000	0	0
How many years of classes have you had in the languages?	12.80	2.538	8	20
How many years have you spent in a country/region where the language was spoken?	19.87	0.507	18	20
How many years have you spent in a family where the language was spoken?	19.80	0.551	18	20
How many years have you spent in a work environment where the language was spoken?	1.03	1.75	0	6

The descriptive statistics for the French language learning experiences are presented in Table 3.3. Participants reported starting to learn French at 6.67 (SD = 1.73) years old and felt comfortable with it at an average of 12.67 (SD = 3.84) years old. The participants had an average of 12.17 years (SD = 2.81) of formal classes in French. No participants reported spending any years in a country or region where French is spoken (M = 0.00, SD = 0.00). However, the time spent in a family environment where French is spoken averaged 19.80 years (SD = 0.55). Participants spent an average of 0.93 years (SD = 1.44) in a work environment where French was spoken.

Table 3.3

Language history for the French language

	French language			
	M	**SD**	**Min**	**Max**
At what age did you start learning the following languages?	6.67	1.73	3	9
At what age did you start to feel comfortable using the language?	12.67	3.84	5	20
How many years of classes have you had in the languages?	12.17	2.81	7	17
How many years have you spent in a country/region where the language was spoken?	0.00	0.000	0	0
How many years have you spent in a family where the language was spoken?	19.80	0.55	18	20
How many years have you spent in a work environment where the language was spoken?	0.93	1.44	0	5

The descriptive statistics for the English language learning experiences are presented in Table 3.4. Participants reported they began learning English at a mean of 11.17 (SD = 1.26) years old. They felt comfortable using the language at an average of 14.97 (SD = 2.65) years old. The participants had an average of 11.00 years (SD = 4.08) of formal classes in English. No participants reported spending any years in a family environment where English is spoken (M = 0.00, SD = 0.00). Participants spent an average of 1.13 years (SD = 2.10) in a work environment where English was spoken.

Table 3.4

Language history for the English language

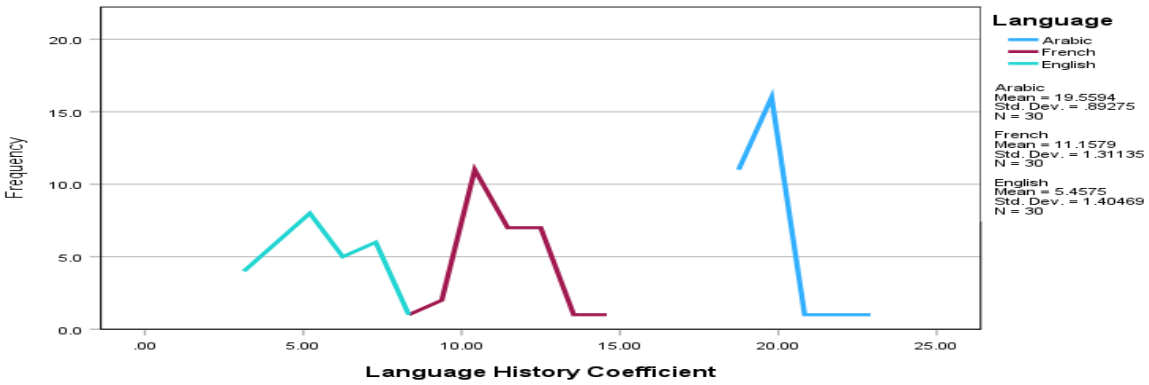
	English language			
	M	**SD**	**Min**	**Max**
At what age did you start learning the following languages?	11.17	1.26	10	14

At what age did you start to feel comfortable using the language?	14.97	2.65	10	20
How many years of classes have you had in the languages?	11.00	4.08	5	17
How many years have you spent in a country/region where the language was spoken?	0.20	1.10	0	0
How many years have you spent in a family where the language was spoken?	0.00	0.000	0	0
How many years have you spent in a work environment where the language was spoken?	1.13	2.10	0	10

When it came to the three different languages subject of this study, Arabic had the highest score (M = 93.90, SD = 4.29), followed by French (M = 53.57, SD = 6.30) then English (M = 26.20, SD = 28.56), a statistically significant difference, $F(2, 87) = 1008.764$, $p < .001$. As far as the language history coefficient is concerned, Arabic had the highest coefficient (M = 19.56, SD = 0.89) followed by French (M = 11.16, SD = 1.31) and then English (M = 5.46, SD = 1.40), a statistically significant difference, $F(2, 87) = 1008.764$, $p < .001$ (Figure 3.1).

Figure 3.1

Language history coefficient by language



3.3.3 Language proficiency

The language proficiency construct in the questionnaire was comprised of a total of 5 questions. The descriptive statistics for proficiency in the Arabic language are presented in Table 3.5. Participants rated their speaking proficiency in Arabic with a mean score of 5.90 (SD = 0.55), ranging from "Moderately well" to "Extremely well." The understanding of Arabic was rated uniformly as "Extremely well" by all participants (M = 6.00, SD = 0.00). Reading proficiency in Arabic had a mean score of 5.97 (SD = 0.18), with participants rating their skills between "Very

well" and "Extremely well." Writing proficiency in Arabic had a mean score of 5.47 (SD = 0.82), with ratings ranging from "Moderately well" to "Extremely well."

Table 3.5

Language proficiency for the Arabic language

	Arabic language			
	M	**SD**	**Min**	**Max**
How well do you speak the language?	5.90	0.548	Moderately well	Extremely well
How well do you understand the language?	6.00	0.000	Extremely well	Extremely well
How well do you read the language?	5.97	0.183	Very well	Extremely well
How well do you write the language?	5.47	0.819	Moderately well	Extremely well

The descriptive statistics for proficiency in the French language are presented in Table 3.6. Participants rated their speaking proficiency in French with a mean score of 4.80 (SD = 0.71), ranging from "Moderately well" to "Extremely well." The understanding of French had a mean score of 5.53 (SD = 0.57), with participants rating their skills from "Quite well" to "Extremely well." Reading proficiency in French had a mean score of 5.63 (SD = 0.49), with ratings ranging from "Very well" to "Extremely well." Writing proficiency in French had a mean score of 4.83 (SD = 0.95), with ratings ranging from "Moderately well" to "Extremely well."

Table 3.6

Language proficiency for the French language

	French language			
	M	**SD**	**Min**	**Max**
How well do you speak the language?	4.80	0.714	Moderately well	Extremely well
How well do you understand the language?	5.53	0.571	Quite well	Extremely well
How well do you read the language?	5.63	0.490	Very well	Extremely well
How well do you write the language?	4.83	0.950	Moderately well	Extremely well

The descriptive statistics for proficiency in the English language are presented in Table 3.7. Participants rated their speaking proficiency in English with a mean score of 5.00 (SD = 0.79),

ranging from “Moderately well” to “Extremely well.” The understanding of English had a mean score of 5.53 (SD = 0.51), with participants rating their skills from “Very well” to “Extremely well.” Reading proficiency in English had a mean score of 5.73 (SD = 0.52), with ratings ranging from “Quite well” to “Extremely well.” Writing proficiency in English had a mean score of 5.10 (SD = 0.92), with ratings ranging from “Moderately well” to “Extremely well.”

Table 3.7

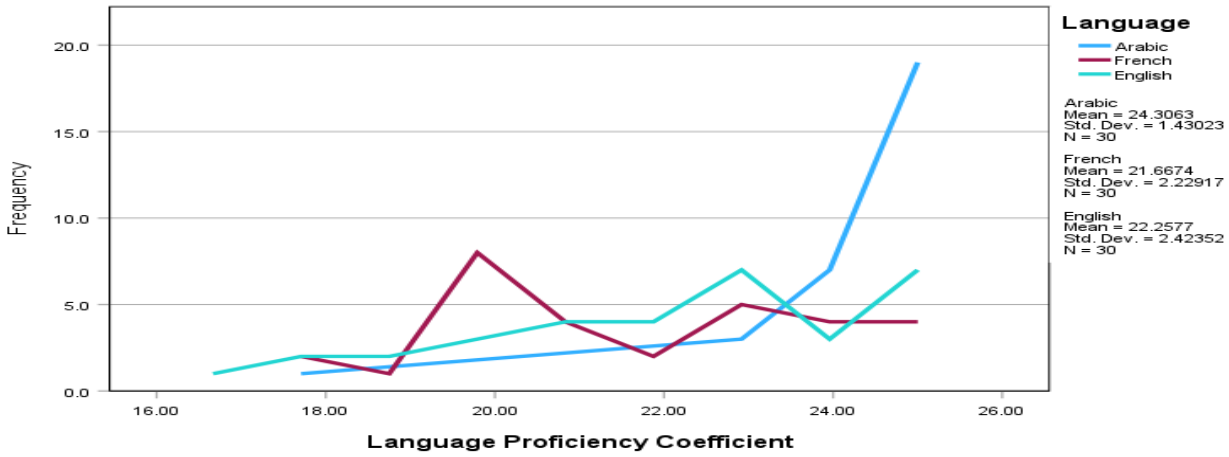
Language proficiency for the English language

	English language			
	M	**SD**	**Min**	**Max**
How well do you speak the language?	5.00	0.788	Moderately well	Extremely well
How well do you understand the language?	5.53	0.507	Very well	Extremely well
How well do you read the language?	5.73	0.521	Quite well	Extremely well
How well do you write the language?	5.10	0.923	Moderately well	Extremely well

Language proficiency was highest for the Arabic language (M = 23.33, SD = 1.37) followed by English (M = 21.37, SD = 2.33) and French (M = 20.80, SD = 2.14), a statistically significant difference, $F(2, 87) = 13.396$, $p < .001$. Similarly, the mean language proficiency coefficient was highest for Arabic (M = 24.31, SD = 1.43) followed by English (M = 22.26, SD = 2.42), then French (M = 21.67, SD = 2.23), a statistically significant difference, $F(2, 87) = 13.396$, $p < .001$ (Figure 3.2).

Figure 3.2

Language proficiency coefficient by language



Overall, the mean global proficiency score was 65.50 (SD = 4.20), ranging from 56 to 72. With a score of zero to 25 indicating basic proficiency, a score of 26 to 50 intermediate, and over the score of 51 indicating high proficiency, all participants were considered highly proficient.

3.3.4 Use of language switching

The use of language switching construct in the questionnaire was comprised of a total of 6 questions. The descriptive statistics for the frequency of language switching are presented in Table 3.8. Participants reported switching languages with friends with a mean frequency of 5.40 (SD = 0.61), ranging from "Somewhat often" to "Very common." Switching languages with family had a mean frequency of 3.07 (SD = 0.82), ranging from "Very rarely" to "Somewhat often." The frequency of switching languages at school or work had a mean score of 5.33 (SD = 0.75), with responses ranging from "Somewhat often" to "Very common." Switching languages in the community had a mean score of 3.40 (SD = 1.12), ranging from "Rarely" to "Very common." Participants reported switching languages when talking to themselves with a mean frequency of 5.23 (SD = 0.67), ranging from "Somewhat often" to "Very common." The frequency of switching languages when counting had a mean score of 4.47 (SD = 1.06), ranging from "Rarely" to "Very common."

Table 3.8

Use of language switching

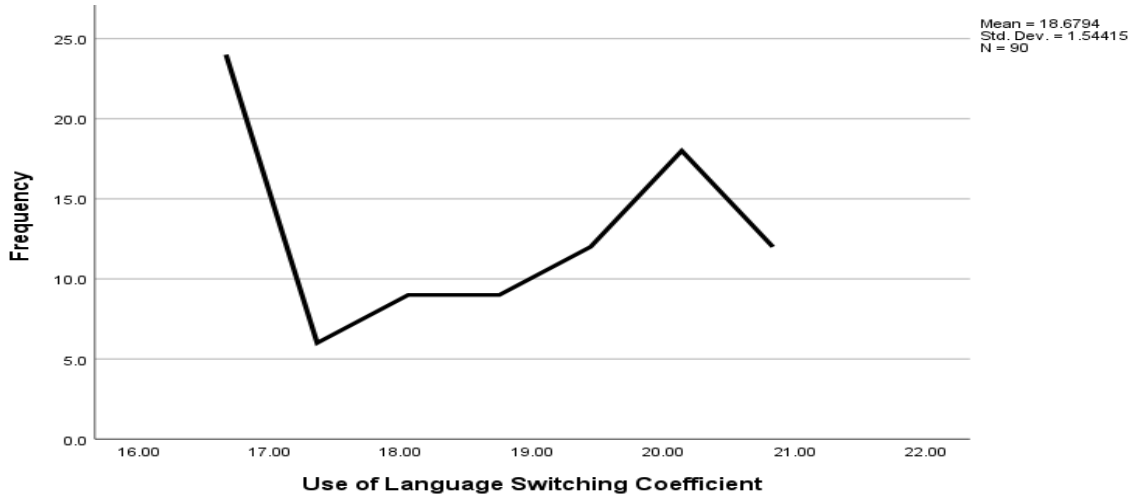
	M	SD	Min	Max
How common is it for you to switch languages with friends?	5.40	0.614	Somewhat often	Very common
How common is it for you to switch languages with family?	3.07	0.818	Very rarely	Somewhat often
How common is it for you to switch languages at school or work?	5.33	0.750	Somewhat often	Very common
How common is it for you to switch languages in your community?	3.40	1.120	Rarely	Very common
How common is it for you to switch languages when talking to yourself?	5.23	0.671	Somewhat often	Very common
How common is it for you to switch languages when counting?	4.47	1.062	Rarely	Very common

Overall, use of language switching had a mean sum was 26.90 (SD = 2.22), ranging from 24 to 30. Scores under 15 were considered to be non-habitual codeswitchers while scores above 15 were

deemed to be habitual codeswitchers. All of the participants, 100% of the sample, were habitual codeswitchers.

Figure 3.3

Use of Language switching coefficient



3.3.5 Attitudes towards language switching

The use of language switching construct in the questionnaire comprised a total of 4 questions. The descriptive statistics for the perceptions of language switching are presented in Table 3.9. Participants reported feeling like themselves when switching languages with a mean score of 5.43 (SD = 0.62), ranging from "Slightly agree" to "Strongly agree." Identifying with a community or culture that switches languages had a mean score of 5.43 (SD = 0.67), with responses ranging from "Slightly agree" to "Strongly agree." The importance of switching languages in a natural way had a mean score of 5.17 (SD = 0.78), ranging from "Slightly agree" to "Strongly agree." Participants reported that they want others to think they switch languages in a natural way with a mean score of 2.63 (SD = 1.65), ranging from "Strongly disagree" to "Agree."

Table 3.9

Attitudes towards language switching

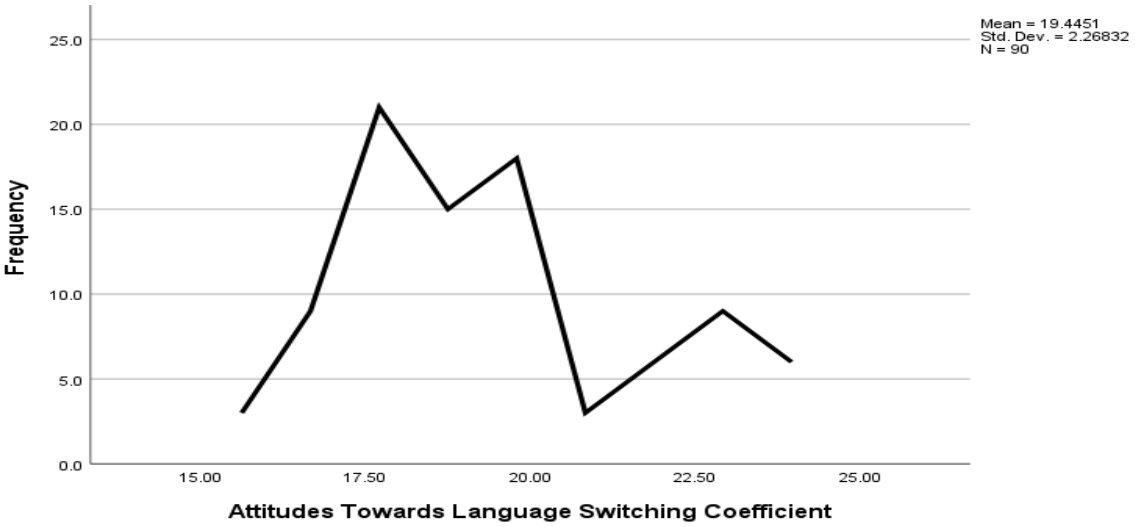
	M	SD	Min	Max
I feel like myself when I switch languages.	5.43	0.619	Slightly agree	Strongly agree
I identify with a community/culture that switches languages.	5.43	0.671	Slightly agree	Strongly agree
It is important to me to switch languages in a natural way.	5.17	0.783	Slightly agree	Strongly agree

I want others to think that I switch languages in a natural way.	2.63	1.652	Strongly disagree	Agree

Overall, attitudes towards language switching had a mean sum of 18.67 (SD = 2.20), ranging from 15 to 23. In using 15 as the cutoff value, 100% of the participants had a positive attitude towards language switching.

Figure 3.4

Attitudes towards language switching coefficient



For a comprehensive overview of the descriptive statistics of sum and coefficient means for language history, proficiency, use of language switching, and attitudes toward language switching, refer to Appendix G.

3.4 Data collection

3.4.1 Data collection procedures

This section outlines the procedures followed to gather sufficient data, using three data collection tools—questionnaire, audio recording, and metalinguistic interviews—to address the research questions. As Nortier (2008) notes, there is no single best method for collecting bilingual data; rather, the most effective outcomes are achieved by combining two or more data collection techniques. Before listing these procedures, it is important to note that some are described in detail in other sections. The procedures are: 1) Obtaining approval from the Ethics Committee of the University of Pannonia to initiate data collection. This involved completing and submitting the

Research Ethics Application Form to the Multilingualism Doctoral School at the University of Pannonia. The Ethics Committee granted approval in May 2023 (see Appendix A). 2) Identifying a standardized questionnaire that could assist in building a multilingual's CS profile and making the necessary modifications to align it with the specific objectives of the research. 3) Identifying and contacting potential participants. 4) Meeting with the potential participants in person to administer the questionnaire. The researcher, along with a Tunisian female research assistant, administered the questionnaire at times and locations chosen by the participants. It is important to highlight that "Although research has suggested that proficiency ratings by bilingual participants are not significantly impacted by the language in which the assessment is conducted" (Delgado et al., 1999; as cited in Olson, 2022, p. 22), participants selected the language of their choice to answer the questionnaire (Arabic n = 0; French n = 18; English n = 11). 5) Analyzing the questionnaire data to select the qualified participants, using specific measures as screening criteria. Participants who failed to reach the established thresholds were excluded from selection (see Section 3.4.2.1 for information on the established thresholds). Additionally, individuals who had experienced significant life changes that could affect their daily language use were also removed from selection, as such changes can influence CS practices (Birdsong et al., 2012; Olson, 2022). 6) Contacting the selected participants in order to gain their approval to participate in the study. 7) Meeting with the participants in person at a time and place of their choosing, the research assistant recorded their conversations. The assistant also ensured that the participants signed two copies of a written consent form, available in three different language versions, and proceeded to audio-record their conversations. 8) Recontacting the participants to conduct metalinguistic interviews. 9) Conducting online and in-person metalinguistic interviews, the researcher interviewed participants who were available and willing to participate.

Finally, it is important to note that these procedures, spanning from obtaining approval in May 2023 to conducting the metalinguistic interviews, were time-consuming and extended over nearly a year.

3.4.2 Sources of data

3.4.2.1 Questionnaire

CS is often correlated with factors such as proficiency, frequency of use, language attitudes and so forth (see Section 2.5). Therefore, finding a tool that is reliable, valid and highly practical that

can be used to quickly and easily gather information about key factors pertinent to CS is of great importance to this study. One such tool is the Bilingual Language Profile (BLP; Birdsong et al., 2012). According to Treffers-Daller (2011), the BLP underwent multiple rounds of pilot testing to refine, shorten, and clarify questionnaire items, ensuring their relevance for diverse bilingual populations. According to Olson (2023), the BLP has been referenced in "hundreds of research papers" spanning a wide range of linguistic and non-linguistic subfields (p. 11). Additionally, Olson demonstrates that the BLP was designed to be easily adaptable to various types of bilinguals across different communities. Thus, given its robust design, this study adopted the BLP, with modifications tailored to the specific needs of this research. The modified version is termed the Multilingual Language Profile (MLP; see Appendix D). Since the original BLP is designed for bilingual speakers, adjustments were necessary to extend its applicability to multilingual speakers. Specifically, in the modules 'Language history' and 'Language proficiency', the questionnaire was adapted to include three languages instead of two. Additionally, the modules 'Language use' and 'Language attitudes' were replaced with modules focusing on the use of language switching and attitudes towards language switching, as adapted from the Bilingual Code-Switching Profile (BCSP; Olson, 2022), which itself was developed from the BLP. Two critical points are to be emphasized here. First, Olson chose to use the term 'language switching' instead of 'CS' in the BCSP, as the latter "is not commonly used by the general public," even though he asserted that the two terms "should be distinguished" (Olson, 2022, p. 3). Second, replacing the original BLP modules to emphasize language switching rather than the use of languages in isolation, and to prioritize attitudes towards language switching over attitudes towards individual languages, was crucial for aligning with the study's objectives. Assessing a multilingual's experience and engagement with CS was deemed more pertinent to the study's goals than focusing on language use or attitudes towards languages individually. This decision is particularly important given the consideration that "Attitudes toward code-switching may, however, need to be considered separately from attitudes toward individual languages" (Yim & Clément, 2021, p. 1371). In other words, attitudes towards CS are distinct because they reflect an appreciation of the languages when used together, rather than a simple aggregation of attitudes toward each language individually (Yim & Clément, 2021). To give an example, in the Hong Kong context, while both Cantonese and English are highly valued and hold significant social status, the act of CS between them often results in a negative perception of the speech as a whole (Gibbons, 1987, as cited in Yim &

Clément, 2021, p. 1371). To conclude, Olson (2022) illustrates that the BCSP can effectively integrate with other instruments, such as the BLP to provide a more comprehensive understanding of CS engagement and language choice.

The MLP consists of 29 items in total, with 20 of these items designed to elicit responses about each of a multilingual's three languages. The MLP contains an introductory section for collecting biographical information about the participants and four modules designed to treat different aspects of CS. The language history module (6 questions) gathers information about the age of acquisition of each language, the age at which the participant felt comfortable using each language, the number of years of schooling in each language, the time spent in a country or region in which each language is predominantly used, the time spent in a family where each language is used, and the time spent in a work environment where each language is used. In the language proficiency module (4 questions), the participants are asked to rate how well they speak, understand, read and write in each language on a scale from 0 (not well at all) to 6 (very well) for each language. Use of language switching questions (6 questions) seek information on the commonness of switching languages in various contexts: with friends, with family, at school or work, and in the community. This section also asks participants to relate how common they switch languages when talking to themselves and how common they switch languages when counting. The final module (4 questions) investigates attitudes towards language switching, asking the degree to which the participants feel like themselves when switching languages, how much they identify with a community/culture that switches languages, the importance of switching languages in a natural way, and the importance of being seen as switching languages in a natural way.

Each response in the MLP is assigned a specific point value, with module scores calculated by summing the points for all items within that module. It is important to note that questions regarding the age at which participants started learning each language and felt comfortable using each language are reverse scored. For these questions, responses such as 'since birth' and 'as early as I can remember' are awarded 20 points, while a response of 'not yet' receives 0 points. Another important point is that in module 2 and module 3, responses for each language are evaluated separately. The module score is then multiplied by a weighting coefficient to provide equal weight to each module score. Table 3.10 illustrates the weighting coefficient for each module.

Table 3.10

MLP modules and weighting coefficients

Module	Scale	Number of questions	Weighting coefficient	Total weight (%)
Language history	0–20	6	0.2083	25
Language Proficiency	0–6	4	1.0417	25
Use of language switching	0–6	6	0.6944	25
Attitudes towards language switching	0–6	4	1.0417	25

It is important to highlight that in module 3 a global proficiency score (Dewaele, 2015; Dewaele & Wei, 2014; Dewaele & Stavans, 2014) for the three languages was calculated by summing the weighted scores for each language. According to Dewaele and Stavans (2014):

> This measure gives us a more fine-grained image of an individual's knowledge in various languages. We could distinguish between those claiming to know several languages, even at low levels of proficiency from those claiming knowledge of fewer languages but at a higher level. (p. 9)

In other words, the global proficiency measure provides a more detailed assessment of an individual's actual abilities in oral and written skills across various languages, as opposed to simply counting the number of languages they have acquired (Dewaele, 2015).

Another key point to note is that Birdsong et al. (2012) do not propose any particular cut-off points for interpreting BLP scores, leading researchers to develop their own methods for score interpretation. For example, Yim and Clément (2021) suggested splitting the sample at the midpoint of the scale (i.e., using a cut-off point of 4 on a seven-point Likert scale) to achieve a more precise categorization of subgroups, while Dewaele and Wei (2014) classified global proficiency scores into categories based on standard deviations from the mean , with scores below one standard deviation as 'Low Proficiency,' above as 'High Proficiency,' and scores within one standard deviation as 'Medium Proficiency'. In this study, the lack of specific cut-off points is tackled by establishing thresholds for interpreting data. For module 3, scores were categorized into basic (0–25), intermediate (26–50), and advanced (51–75) proficiency levels. In module 4, thresholds differentiated non-habitual codeswitchers (scores < 15) from habitual codeswitchers (scores ≥ 15). For Module 5, attitudes towards CS were classified as negative (scores < 15), neutral (scores = 15), or positive (scores > 15). This approach provided a structured framework for

analyzing the proficiency levels, use, and attitudes towards CS, in line with the practices outlined by Dewaele and Wei (2014) and Yim and Clément (2021).

3.4.2.2 Audio-recording

Audio recording serves as one of the primary data collection methods for this research. Over a period of approximately four months, informal conversations involving 29 participants across eight groups were recorded. These recordings yielded a total of 5.12 hours of audio material. The duration of each recorded session ranged from 30 minutes to 53 minutes, with the number of participants per group varying between two and five (see Table 3.1). It is important to note that this sample size was deliberately aimed for as explained before.

I consider it important to highlight the following points: 1) From the outset, including the participant recruitment stage, the researcher and/or the research assistant provided enough information about the study without compromising the validity of the results. In other words, participants were not informed that the research would focus on their use of CS to avoid influencing their natural speech and to ensure authentic data collection (Dörnyei & Taguchi, 2009; Nortier, 2008). 2) Prior to starting the audio recording, each participant was given a note listing five topics in the following order: daily routine, travel, technology and communication, cultural celebrations, and women's rights (cf. Nortier, 2008; Post, 2015; Scheu, 2000). Participants were given full reign to select which topics they wished to discuss from this list. 3) Free language choice was emphasized at the beginning of each recording session. 4) A high-quality smartphone, a device familiar to the participants, was used to record the conversations. To ensure clarity in capturing their voices, the smartphone was placed in the centre of the table around which the participants were seated. 5) All recordings were made by the Tunisian research assistant who was present and acted as a moderator. The researcher, despite being mindful of the "observer's paradox" (Labov, 1966), adopted the approach of "participant observation," (Nortier, 2008, p. 40) where the observer engages from within the group as a member, rather than observing from an external perspective. The researcher followed the example of other CS researchers—Chen (2015), Maschler (1997a), Nortier (2008), and Sayahi (2011).

3.4.2.3 Metalinguistic interviews

"Qualitative research, by definition, places value in the analyst's interpretation of data" (O'Connor & Joffe, 2020, p. 3). However, Dewaele and Wei (2014) demonstrate that engaging in conversations with participants is the most effective method for investigating the reasons behind their attitudes and linguistic behavior. According to Ehrhart (2015), a thorough understanding of the communicative role of what researchers interpret as CS necessitates linking the speakers' linguistic productions with their own interpretations of specific speech acts. This involves presenting the collected data to the participants and engaging them in the analysis process. Ehrhart asserts that "This is the way I am trying to do my research work" (p. 309). Accordingly, in order to avoid the substantial risk of misinterpreting the true motivations behind CS when analyzing it from an external perspective (Ehrhart, 2015), it was considered essential to apply the metalinguistic interview as a data collection tool.

This research methodology involved interviewing participants based on their availability to further explore their use of CS in conversations. Out of the 29 participants, nine agreed to participate in these interviews. Fortunately, these participants represented all eight groups, with one or two individuals from each group. The interviews were conducted one-on-one, either online or in person, and each session lasted approximately one hour (see Table 3.11). Participants were clearly informed about the purpose of the interview, which was to discuss their use of CS and to provide explanations for it. The participant had to listen to selected parts of their conversation, followed by questions about their CS behavior. It is important to highlight the following points. 1) The interval between the conversation and the interview was kept as short as possible, for the time lapse may affect recalling the targeted thought or judgement (Dörnyei, 2007; Gass & Mackey, 2013). 2) As the participants were expected to provide direct and short responses to the researcher's questions, it was decided that recording the interview was unnecessary and notes on their answers were taken instead.

Table 3.11

Overview of metalinguistic interviews

Title	Date	Type	Length (Minute)	Participant
Interview 1	5/12/2023	In-person	53	Amanda
Interview 2	14/12/2023	In-person	55	Salim
Interview 3	14/12/2023	In-person	59	Amir

Interview 4	28/12/2023	In-person	55	Rose
Interview 5	7/1/2024	Online	58	Hana
Interview 6	20/1/2024	Online	52	Madlin
Interview 7	27/1/2024	Online	65	Rashed
Interview 8	7/3/2024	Online	53	Kinda
Interview 9	30/3/2024	Online	62	Rawan

3.5 Data analysis procedures

This section outlines the procedures followed for the qualitative and quantitative analysis of the data collected through audio recording. Before listing these procedures, it is important to note that some of these procedures are described in detail in other sections. The procedures are: 1) The recorded conversations, which are the primary data source for this study, were first transcribed by a native MA speaker proficient in French and English. To ensure accuracy, a second native speaker ,who is also proficient in French and English, verified the transcription. The researcher then conducted a final review, further ensuring that the conversations were precisely transcribed for reliable analysis. 2) Borrowed elements were identified and distinguished from codeswitched elements (see Section 3.5.1). 3) The extent of each language usage in the entire data was quantified. To this end, two tables (see Section 3.5.2) were developed: Table 3.12 which presents a detailed breakdown of word counts by language and topic across the eight recordings, and Table 3.13 which presents total word counts and percentages by topic across MA, French, and English. This procedure was crucial for providing an overview of linguistic preference and dominance within the various semantic domains. 4) One of the transcripts was selected for a detailed review, and occurrences of CS were analyzed through content analysis to interpret their functions (see Section 3.5.1.3). 5) Data from the metalinguistic interviews, along with comparisons and contrasts across participants, were employed to help identify and categorize the functions of CS. 6) ICR (see Section 2.9) was applied as a necessary step to, among other benefits, enhance "the systematicity, communicability, and transparency of the coding process" (O'Connor & Joffe, 2020, p. 1). 7) Several theoretical approaches to CS were reviewed, and their explanatory efficacy was evaluated in relation to the data. The functions of CS were interpreted based on these theoretical frameworks. 8) The percentage distribution of the broader categories—pragmatic, semantic, linguistic, and sociocultural—was calculated across the entire dataset. 9) Each CS broader category was presented

and discussed in a separate subsection where representative examples from the data were called into play (see Appendix F, *Note on transliteration*).

The following subsections provide a detailed explanation of the methods followed for the qualitative and quantitative analysis of the data collected and the specific analytical frameworks applied.

3.5.1 Qualitative data analysis

Qualitative data analysis aims at answering RQ1: 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?

3.5.1.1 Transcription system

As mentioned before, qualitative analysis of the data began with transcribing the recorded conversations. Audio material of 5.12 hours of recorded speech with a conservative estimate of 36,780 words was transcribed in full and constituted the main corpus upon which this study is based. It is worth pointing out that the transcription process was a very challenging task for two main reasons: 1) The participants in this study come from different Arab countries whose dialects are different and to some extent difficult to understand. 2) To the best of the researcher's knowledge, there is no software on the market that can transcribe MA, French and English all together in the same conversation and thus the transcription had to be conducted manually (see Appendix I for information on the transcription conventions).

Transcription conventions follow Berman and Slobin (1994) with a few additions. The transcripts were segmented into *clause units*, defined as "any unit that contains a unified predicate. By unified, we mean a predicate that expresses a single situation (activity, event, state)" (Berman & Slobin, 1994, p. 660). Stavans and Muchnik (2008) found this approach to be particularly "appropriate for the analysis of trilingual productions" (p. 495). Additionally, scholars such as Myslín and Levy (2015), who used intonation units (IUs) as their primary unit of analysis, note that although IUs are defined based on auditory features rather than syntactic ones, IUs often emerge as approximate equivalents to clauses. This further supports the decision to use the clause as a reliable unit of analysis. While Berman and Slobin's (1994) coding principles require that

each clause be entered on a new text line (p. 658), due to space restrictions and to ensure readability when presenting examples in this study, the entire turn of a speaker is presented together instead.

3.5.1.2 Identifying loanwords

As explained in Section 2.4.2.2, identifying borrowed elements and distinguishing them from codeswitched ones has long posed methodological challenges in CS research. Fortunately, the researcher was able to draw on several recent works which provide methodologically sound borrowing lists that serve as invaluable references. For instance, Post (2015) examined Arabic-French CS in Moroccan speech and instant messaging, offering detailed borrowing lists in her doctoral thesis. Sayahi (2007) contributed a list of borrowed items in his study on diglossia and contact-induced language change. Similarly, Oueslati (2021) analyzed French loans in Tunisian Arabic from a phonetic and phonological perspective, also providing a borrowing list. Mosteghanemi (2020) investigated lexical borrowing in Tunisian Arabic, examining an oral corpus from various regions in Tunisia.

In addition to offering borrowing lists, these works provide explicit, methodologically grounded criteria for identifying LBs. For example, Oueslati (2021) identifies borrowed items based on systematic phonetic and phonological substitutions, where French sounds are consistently adapted to Tunisian Arabic through rule-governed processes such as delabialization, denasalization, voicing, and syllabic restructuring. Mosteghanemi (2020) relies on a tripartite integration model, analyzing phonological, morphological, and semantic adaptation—focusing on sound changes, assignment of gender and number, and meaning shifts to determine the borrowing status of lexical items. Post (2015) adopts a multi-metric framework, evaluating French-origin nouns based on frequency of use, absence from Moroccan Arabic dictionaries, morphosyntactic integration (e.g., gender, definiteness, adjective agreement), and distribution across speakers and contexts, allowing for a clear distinction between stable LBs and codeswitched elements.

To conclude, these studies significantly informed the identification of LBs in the present study. Appendix H illustrates all loanwords found in the data.

3.5.1.3 Analytical tools

Content analysis was used as the initial approach for data analysis in the present study. The transcripts were analyzed following the steps of content analysis as outlined by Elo and Kyngäs

(2008, as cited in Vaismoradi et al., 2013, pp. 401–402). The researcher thoroughly read and reread the transcripts multiple times to gain a comprehensive understanding of the data. Meaning units were then identified from the transcripts and categorized under four broader categories—pragmatic, semantic, linguistic, and sociocultural.

However, identifying and categorizing meaning units presented certain challenges. Although many instances of CS in the data clearly align with a single function, this is not always the case. In some instances, determining the specific function of a CS occurrence is complex. This complexity arises because the same instance can convincingly and simultaneously serve multiple functions, making it potentially classifiable under different categories. Additionally, some instances of CS serve no obvious function within the given context, particularly those used only once by a speaker. Nonetheless, using data from metalinguistic interviews, comparing and contrasting data across participants, and applying ICR (see Section 3.5.1.4) have proven valuable in making more definitive decisions.

After this initial analysis, several theoretical approaches to CS were reviewed and their explanatory efficacy evaluated in relation to the data. Through this assessment, it was concluded that semantic approaches and cultural-cognitive approaches were essential to unpack and explain the different functions of CS as appearing in the data. Thus, Cognitive Linguistics, represented by the usage-based approach (Diessel, 2017) and frame semantics (Fillmore, 2006), along with the analytical tools of CL (Sharifian, 2017), were adopted as the most suitable analytical tools for the present research.

3.5.1.4 Intercoder reliability

To obtain ICR for the present study, the guidelines by O'Connor and Joffe (2020) were followed. A coding frame with four categories—pragmatic, semantic, linguistic, and sociocultural—was created following an in-depth engagement with the data. An external coder, an MA-French-English trilingual speaker, was recruited. The coder applied the coding frame to one transcript, representing 10–25% of the total dataset, in line with Campbell et al.'s (2013, as cited in O'Connor & Joffe, 2020) recommendation. Each instance of CS was labeled using one of the four codes. The coding results for the two coders were as follows:

- Coder 1: Pragmatic (132), Semantic (125), Linguistic (43), Sociocultural (90)
- Coder 2: Pragmatic (123), Semantic (117), Linguistic (35), Sociocultural (115)

The total number of cases was 390, and the total number of agreed cases across all categories was 318.

ICR was calculated using Cohen's kappa, a statistical test frequently used for this purpose (O'Connor & Joffe, 2020). Cohen's kappa removes chance agreement from the calculation (Cohen, 1960, p. 40). The resulting kappa coefficient was 0.7432, indicating substantial agreement between coders. Since there is no universally accepted threshold for reliability, the researcher set an a priori target for Cohen's kappa between 0.61 and 0.80, following Landis and Koch's (1977) widely referenced recommendation for interpreting values (as cited in O'Connor & Joffe, 2020). Once this satisfactory level of ICR was achieved, the researcher proceeded to independently code the remaining data using the established coding frame.

3.5.2 Quantitative data analysis

In this study, quantitative data analysis appears in different stages and serves distinct purposes. Firstly, it was used to quantify the data from the questionnaire responses, which were analyzed to select qualified participants. To provide further details, specific measures were used as screening criteria, and participants who did not meet the established thresholds were excluded from the final selection. Additionally, descriptive statistics were used to provide an overview of the participants' CS profiles, offering insights into their biographical information, language history, language proficiency, use of language switching, and attitudes towards language switching (see Section 3.3). This approach ensured both precise participant selection and an understanding of their linguistic behaviours.

Secondly, quantitative data analysis was crucial for providing an overview of linguistic preference and dominance across the semantic domains discussed by the participants. This analysis included a detailed word count. Table 3.12 presents a detailed breakdown of word counts by language and topic across the eight recordings.

Table 3.12

Word counts by language and topic across eight recordings

Title	Word count MA	Word count French	Word count English
Transcription of recording 1	2351	514	494
Daily routine	537	92	109
Travel	1092	299	184
Technology and communication	313	45	102

Cultural celebrations	0	0	0
Women's rights	409	78	99
Transcription of recording 2	2184	317	286
Daily routine	526	77	78
Travel	739	128	108
Technology and communication	292	57	42
Cultural celebrations	439	18	52
Women's rights	188	37	6
Transcription of recording 3	4061	462	518
Daily routine	0	0	0
Travel	859	148	210
Technology and communication	1140	156	188
Cultural celebrations	1107	88	60
Women's rights	955	70	60
Transcription of recording 4	2084	277	974
Daily routine	106	18	42
Travel	194	45	334
Technology and communication	402	60	270
Cultural celebrations	772	46	194
Women's rights	610	108	134
Transcription of recording 5	2479	402	117
Daily routine	249	26	39
Travel	354	59	31
Technology and communication	497	72	19
Cultural celebrations	470	76	7
Women's rights	909	169	20
Transcription of recording 6	4405	781	223
Daily routine	622	108	73
Travel	1298	246	73
Technology and communication	1075	250	63
Cultural celebrations	922	78	11
Women's rights	488	99	3
Transcription of recording 7	2470	373	212
Daily routine	446	150	85
Travel	367	77	25
Technology and communication	306	24	13
Cultural celebrations	694	34	66
Women's rights	657	88	23
Transcription of recording 8	4379	420	599
Daily routine	501	54	75
Travel	1350	132	352
Technology and communication	1058	135	127
Cultural celebrations	634	20	13
Women's rights	836	79	32
Total	28,792	3,966	4,022

It is crucial to highlight the following points. First, certain entries display a zero value, indicating that participants chose not to engage in discussions on those specific issues. In other words, these zero values reflect the absence of dialogue. Second, the word counts provided in Table 3.12 are conservative estimates. Some speech was inaudible during the recorded conversations and, therefore, could not be included. Additionally, certain words were excluded based on predefined criteria. For instance, symbols denoting phonological features of speech such as pauses, hesitation, and laughter were excluded from the word count. Third, in cases where the Arabic definite article or other Arabic affixes were attached to French or English words, these were counted as single words. Fourth, words that could not be definitively classified into any one of the three languages—names of cities, countries, restaurants, cafes, people, shopping places and applications—were excluded from the count. Fifth, contractions in English (e.g., "don't," "let's," "that's") and French (e.g., *l'architecture*, *d'art*) were treated as single words. By adhering to these methodological steps, Table 3.12 provides very detailed word counts across the various topics. Finally, taking into account the varying lengths of the recordings and the number of participants involved in each session, only an overview of language usage can be provided. However, it seems that some emerging insights are noticeable. For example, MA consistently shows the highest total word counts across all topics (with only one exception) and recording sessions. This predominance is particularly evident in longer recordings, where the word count for MA significantly surpasses that of French and English. This prevalence suggests that MA is the preferred language for communication among the participants regardless of the topic under discussion. English is the second most used language overall, with a total word count slightly exceeding that of French. However, a clear pattern does not emerge when examining individual recordings or specific topics, as English and French usage fluctuates, with each language surpassing the other in different recordings and topics.

Table 3.13 provides another breakdown of language usage across the five discussion topics. To provide a more accurate assessment of language usage by topic, the percentage of each language used per topic was calculated. This method offers a clearer understanding of language distribution, as relying solely on raw word counts can be misleading due to the varying total word counts across topics. It is important to note that some participants chose not to discuss certain topics, resulting in a zero value for those topics as shown in Table 3.12. This exclusion affects the

reported percentages. Nevertheless, the researcher opted for providing a general overview of each language's usage within the collected data. For example, the very interesting observation that the topic "cultural celebrations" displays the lowest percentage of French and English usage (lack of CS from MA to French or English).

Table 3.13

Total word counts and percentages by topic across MA, French and English

Topic	Total word count MA	% MA	Total word count French	% French	Total word count English	% English
Daily routine	3,488	75.1%	579	12.5%	576	12.4%
Travel	7,603	72.2%	1,266	12%	1,670	15.8%
Technology and communication	6,141	76.5%	934	11.6%	951	11.9%
Cultural celebrations	5,672	87.7%	380	5.9%	416	6.4%
Women's rights	5,888	96.4%	807	13.2%	409	6.7%

One final point illustrating the use of quantitative data analysis in this study involved addressing RQ2: What is the percentage distribution of the broader categories—pragmatic, semantic, linguistic, and socio-cultural—within the CS practices of the participants in this study? The percentage distribution of these categories was calculated by determining the total number of functions for each category and expressing these as percentages. This approach reveals insights into the roles CS plays in shaping the participants' discourse. Additionally, the percentage of each category was computed for each recording, allowing for comparisons across recordings (see Table 4.14).

CHAPTER 4

RESULTS AND DISCUSSION

Overview

This chapter presents the findings from both qualitative and quantitative analyses of the data collected, focusing on the diverse functions of CS among MA-French-English trilingual speakers in informal conversations. The findings are contextualized within existing research and include a quantitative breakdown of the distribution of these functions across the dataset, offering a deeper understanding of the roles of CS in trilingual communication among the participants.

The chapter is divided into two sections. The first section (4.1) addresses 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 RQ2, providing a quantitative breakdown of the percentage distribution of CS functions across the dataset. This section also includes visual representations, i.e. tables and word clouds, to highlight patterns in CS usage across key topics.

4.1 Categories of CS functions

This section of the study is organized into subsections, each dedicated to discussing one of the broader categories of CS functions—pragmatic, semantic, linguistic, and sociocultural. This order reflects a logical progression, starting with the more immediate and context-driven functions (pragmatic), moving to those focused on deeper layers of meaning (semantic), then addressing structural aspects (linguistic), and finally exploring broader functions related to identity and cultural representation (sociocultural). Within each subsection, the specific functions falling under the respective category are presented and supported by selected excerpts from the transcripts. Due to space constraints, only a few representative excerpts are analyzed. Each excerpt is provided with sufficient context and is followed by a detailed analysis.

Although most instances of CS in the data clearly align with a single function, some occurrences are more complex and resist straightforward classification. In certain cases, the same instance of CS may serve multiple communicative functions simultaneously, depending on the

analytical perspective. This complexity is consistent with Stroud's (1992, as cited in Woolard, 2004, p. 84) observation that any "one instance of code switching could be performing one or a manifold of different functions simultaneously." Another complexity in analyzing the data is that some instances of CS, particularly those used only once by a speaker, seem to serve no obvious function within the given context. While this aligns with Auer's (1984b, as cited in Woolard, 2004, p. 78) caution that "there is a certain danger for the pendulum to swing too far… i.e., to treat each and every instance of language alternation as meaningful in the same 'semantic' way," a thorough analysis is still necessary to determine whether a CS occurrence holds functional significance or is merely incidental. Nonetheless, using data from metalinguistic interviews, comparing and contrasting data across participants, and applying ICR have proven valuable in making more definitive decisions, thereby managing these complexities.

The following examples from the data illustrate these complexities. In one example, a participant switches from MA to French to use the words *résumé* and *article*. This switch appears to serve a semantic function, as these terms are specific to academic domains and are likely more conventional in French than in MA due to the participant's formal education in French. However, the switch also suggests a sociocultural function, as the use of these particular terms may signal the speaker's identity as an educated individual.

Example 1:

ʾaqra – ʾa‘mal résumé lil-article hāḏā.

Example 1: Translation

I read and make a summary of this article

In another example, a participant switches from MA to French to use *les Africains* while describing his daily routine. This switch to *les Africains*, which was used only once by the participant throughout the entire conversation, seems unpurposeful within the immediate context.

Example 2:

timšī lil-**kitchen**, talqāh sāʿa maʿbyah bil-les africains wil-hnūd.

Example 2: Translation

I go to the **kitchen** to find it crowded with Africans and Indians

Another important point to highlight is that, at first glance, certain patterns seem to emerge in the data, such as the use of CS for expressing agreement or disagreement. However, upon closer analysis of the entire dataset, it becomes clear that no consistent pattern exists—agreement and disagreement are often expressed without any CS. The functions discussed within each broader category represent the most commonly observed patterns among the participants, allowing for a broader generalization of the data. Finally, it is sometimes impractical to provide an exhaustive explanation for every individual occurrence of CS within a conversational turn, so a general explanation is often provided instead.

4.1.1 Pragmatic functions

Pragmatic functions involve the use of CS for showing contrast, highlighting important information, listing, signalling conclusion, emotional distancing, message qualification, setting off side-remarks, and using conventional terms.

4.1.1.1 CS for showing contrast

In their study, Zhang et al. (2006) define contrast as a linguistic tool used to highlight distinctions between words or ideas in discourse. They focus on *symmetric contrast*, where parallel linguistic structures convey opposing meanings, as seen with words like "large" and "small" when occurring within a sentence (p. 440). Additionally, they describe *discourse contrast*, marked by conjunctions such as "but," which emphasize opposing ideas within a sentence (p. 440). These contrasts function to clarify distinctions and guide the listener's comprehension of the differences between elements in the discourse (Zhang et al., 2006).

Participants in the present study frequently switch from MA to French and English to emphasize both symmetric and discourse contrasts. For example, in the following excerpt, the participants discuss traditional dresses and how these garments are no longer fashionable, except in very specific regions of Tunis or for special occasions such as weddings. This conversation occurs within the broader context of cultural celebrations.

Example 3:

Hana: (1) fil-ʿīd maʿinnāš ḥāğah muʿayyanah – ʾammā **i think** famma blāyiṣ ʾad-dāḫil fī tūnis fil-manāṭiq ʾad-dāḫilliyyah kān ḥatta fīl-ğanūb wi-šwayyah ʾakṯar fil-ʿādah traditionnelles bil-ḥaqq. baršā maʿnāhā hākā ʾağ-ğabāyib wa hākā ʾal-gafāṭin sāʿāt.

Faith: (2) c'est rare.

Hana: (3) c'est très rare maʿādiš kīmā qabl – qabl nitfakkar mīmātī taḥkīlī kānū ʾal-ḥaqq yilibsū ʾal-kammāliyyah wa yilibsū ʾal-ḥammāmiyyah wil-ḥkāyāt haḏūkum ʾammā *sīnaw* tawwah maʿādiš. tawwah *ğūst* yilibsū ḥāğah moderne.

Faith: (4) yilibsū taw – taw nilibsū ḥāğāt traditionnelles wil-kull. tawwah marbūṭīn bil-ʿarūsāt wil-munāsabāt.

Hana: (5) ḥatta-l ʿarāyis tawwah …

Faith: (6) ḥatta-l ḥāğāt ʾal-traditionnelles wallaw yuruddūhum modernes ʾakṯar – famma modernité/ ʾammā fīhā šwayyah hākā touche traditionnelle/.

Example 3: Translation

Hana: (1) On Eid, we do not have anything specific, but **I think** in the interior regions of Tunisia, especially in the south, traditional dresses like the "jebayeb" and caftan are still worn at times.

Faith: (2) It's rare.

Hana: (3) It's very rare. It is not like before. I remember my grandmother telling me that they used to wear the "kammaliyyah" and the "hammamiyyah" and those things, but now it is not the same anymore. They *just* wear something modern.

Faith: (4) They wear now, now we wear traditional things, but it is all tied to weddings and special occasions.

Hana: (5) Even the brides now …

Faith: (6) Even the traditional dresses, they have made them more modern. There is modernity, but with a little traditional touch.

In this example, words such as *traditionnelles* and *moderne,* which exemplify symmetric contrasts as described by Zhang et al. (2006), are codeswitched from MA into French to emphasize their

opposing meanings. The data in the present study is rich with similar examples, such as the following symmetric contrasts:

- French pairs: *avantages* and *désavantages*, *avantages* and *inconvénients*, *positif* and *négatif*, *plus* and *moins*.
- English pairs: advantages and drawbacks, advantages and disadvantages.

These codeswitched pairs frequently appear within the same sentence in the data. Much like the use of *traditionnelles* and *moderne* in the above example, these pairs exemplify symmetric contrasts and are frequently switched from MA, the dominant language, to emphasize their opposing meanings.

The following example illustrates discourse contrast, where a speaker marks opposing ideas across consecutive sentences. The participants discuss their interests when traveling. This conversation takes place within the broader context of travel.

Example 4:

Angela: (1)	(ʾayh) **i get inspired** bir-rasim (hahaha).
Yaser: (2)	Subħān-allah (hahaha).
Rose: (3)	ʾanā ḫāṭīnī hāḏ-al ʿafāyis.
Angela: (4)	**i get inspired** ʾanā-l ḥaqq – –
Rose: (5)	ʾanā ḫāṭīnī –ʾanā kī nšūf hakdā kiš mā musée hakdā guddāmī wallā kiš **painting** wallā ʾay ʿafsah. ʿalabālkī nšūf maʿāhā hākā bibrūd.
Yaser: (6)	mayḥarrik wālu (hahaha).
Rose: (7)	ʾanā yiḥarriknī-l **food** (hahaha). ḥājah bizzāf šābbah wallā **adventure,** nḥibb **sky diving**.

Example 4: Translation

Angela: (1)	Yeah, **I get inspired** by drawing.
Yaser: (2)	Glory to God.
Rose: (3)	I am not into these kinds of things.
Angela: (4)	**I get inspired**; honestly, I am …

Rose: (5) I am not into it; when I see something like a museum in front of me or some painting or anything alike, I just look at it with indifference.

Yaser: (6) It does not move anything in you.

Rose: (7) What moves me are **food**, something really amazing or an **adventure**, I love **skydiving**.

This example demonstrates discourse contrast through Rose's speech, where she contrasts two opposing sets of interests: cultural activities (like museums and paintings) and more physical or sensory experiences (like food and adventure). In her initial statement (5), Rose downplays her interest in cultural activities, expressing indifference toward museums and paintings. This is marked by her explicit declaration, "I just look at it with indifference." In contrast, Rose's final statement (7) shifts to what truly excites her—food and adventure—highlighting the sharp opposition with those mentioned in statement (5). Overall, this highlights how the speakers in the present study employ CS as a deliberate strategy to mark and enhance the contrast.

4.1.1.2 CS for highlighting important information

CS serves as an important tool for speakers to highlight important information (Auer, 1984; Chaiwichian, 2007; Gumperz, 1982; Hoffmann, 1991; Koziol, 2000; Malik, 1994; Myslín & Levy, 2015). This use of CS is evident in the data from the present study where the participants, who are dominant in MA but also proficient in French and English, frequently switch from MA to the less dominant languages (French or English) to mark important information.

The following excerpt provides a compelling example of CS as a means of highlighting important information. The excerpt represents a discussion about travel preferences between two participants. Angela emphasizes her interest in visiting museums and spending significant time viewing paintings, while Rose expresses her opposing viewpoint, finding such activities boring and a waste of money. In this argument, Angela and Rose use CS to highlight the priorities the two have when it comes to travel.

Example 5:

Rose: (1) ʾanā hākda nḥibb ḥāğah tistāhil trūḥīlha tšūfīhā wi tistāhil tiḫsrī darāhmik fīhā, mašī musée. ʾanā pour moi, yaʿnī manḥibbiš nrūḥ li musée. walā hāḏi tbānlī **so boring**.

Angela: (2) ʾiṣ-ṣarāḥah, **i enjoy**.

Rose: (3) wiš tʾ- **enjoy**?

Angela: (4) **i enjoy the paintings.** ʾanā kī nibdā nitfarrağ – –

Rose: (5) ṣaḥ tḥibbī **art – –**

Angela: (6) (ʾayh) kuburhā kubur-ilḥayṭ wi tibdā hākā maʿnāhā … wi bien sûr miš **modern art** ḫāṭir mayiʿğibnīš. ʾammā **the classics** kī nibdā fī musée … **last time i went to a museum** fī būdābist **i spent four hours** blā manḥiss bīhum yaʿnī.

Example 5: Translation

Rose: (1) I like something that is worth going to see and worth spending your money on, not a museum. For me, I mean, I do not like going to a museum. It seems **so boring** to me.

Angela: (2) Honestly, **I enjoy**.

Rose: (3) What do you **enjoy**?

Angela: (4) **I enjoy the paintings**. When I start looking at them

Rose: (5) It is true that you like **art**

Angela: (6) Yeah, when it is big, as big as the wall, and it looks like. And of course, not **modern art**, because I do not like it. But **the classics**, when I start in a museum. **last time I went to a museum** in Budapest, **I spent four hours** without even noticing it.

This excerpt demonstrates how CS is used to emphasize key points in the argument. Rose switches to the English phrase "so boring" and the French expressions *musée* and *pour moi* to strongly express her disinterest in museums, while Angela switches to highlight her passion for art, using English clauses like "I enjoy" and "I spent four hours." This CS highlights their differing priorities, with Rose emphasizing her dislike for museums and Angela reinforcing her deep appreciation for art. This aligns with research showing that CS can be used to mark important information.

Another clear observation from the data regarding the function of CS for highlighting important information is the frequent use of repetition. Participants often reaffirm specific parts of their speech by translating these parts from MA into English or French, ensuring the listener's attention is drawn to the emphasized content. In the following example, the participants discuss feminism in the broader context of women's rights. They agree that women and men should have equal rights but reject the idea that women no longer need men.

Example 6:

Madlin: (1) maniʿrafš ʾanā … malāzimš zādā nqallil min qīmat ir-rāğil. *ku maym* kul wāḥid wa dawraw. kul wāḥid ʿanduh hākā les rôles mtāʿuh wa hū kīf ʾili-mrā tiḥtāğ-il-rāğil kīf kīf ʾir-rāğil yiḥtāğ-il mrā. *dawnk* mayilzamš tkūn barša féministe – nʿirafš des exemples.

Manal: (2) maʿindīš ḥattā ʾanā exemple wāḍiḥ kīfāš fikrit-il féminisme ḫāybah. ʾammā il-ḥaqīqah manīš féministe. *may* tḥiss rūḥak maʿ-il ḥaqq.

Shaher: (3) huwwah yaḫtalif-it taʿbīr. kul ḥadd wa wiš yarāhā. ʾammā bin-nisbah līyya ir-rāğil yiḥtāğ-il mrā wil- mrā tiḥtāğ-ir-rāğil. yaʿnī manağğimš maʿnāhā **they need each other**. hāḏā haw généralement – maʿandī manzīd.

Example 6: Translation

Madlin: (1) I do not really know. But we should not diminish the value of men. *Anyway*, everyone has their role. Everyone has their own roles, and just like a woman needs a man, a man also needs a woman. *So* you should not be too feminist. I do not really know of any examples.

Manal: (2) I do not have any clear example of how the idea of feminism is bad either. But honestly, I am not a feminist. But you should be on the side of what is right.

Shaher: (3) It is just a matter of expression. Everyone sees it their own way. But for me, a man needs a woman, and a woman needs a man. I can not imagine it any other way; **they need each other**. That's it generally – I have nothing more to add.

In this example, the participants use CS to emphasize key ideas by translating them into French and English. The MA word *dawr* ("role") is repeated in French to highlight the belief that men and

women each have their unique roles. Similarly, “they need each other” is emphasized in English as a translation from MA, reinforcing the idea of mutual dependence. This repetition through translation draws attention to the core message: equal rights do not eliminate the need for men and women to support each other.

4.1.1.3 CS for listing

Participants in the present study frequently engage in CS when listing items, a behavior that may be influenced by their educational background. From a pragmatic perspective, this use of CS aligns with broader discussions of information structure (Muntendam & Parafita Couto, 2024), as it serves to package information in a way that enhances clarity and precision. Similar to educational contexts where coherence and structured presentation of information are emphasized, switching between languages during listing may function as a strategic tool that helps speakers more effectively organize and sequence their thoughts, ensuring that their message is clearer to the listener.

The following example illustrates this function of CS. In this instance, participants discuss their travel experiences, specifically focusing on the best countries they have visited. This conversation occurs within the general topic of travel.

Example 7:

Rawan: (1)	wa ʾanā wal-ḥamdu li-llāh **time traveler**. mašīt li-bāršā buldān mizyanah.
Iman: (2)	ʾanāhum ṯalāṯ ʾaḥsan buldān?
Rawan: (3)	ṯalāṯa ʾaḥsan buldān? …
Soufia: (4)	qūlilnā **per continent**.
Rawan: (5)	**per continent** – nqūl maṯalan – fī **asia** naḥuṭ ʾal-hind. ʾal-hind kānat rawʿah.
Iman: (6)	wayn mašīt?
Rawan: (7)	ʾal-hind ʾanā ʿaddīt fīhā ḫams jumʿāt. fa-kān naqʿud naḥkī-lak ʿalā **route** ʾillī ʿmalthā – mašīt mil nord lil sud wa ʿaddīt fīhā bāršā waqt. fī **europe** fī **europe** fī l’europe ʾal-ḥaqīqa/ naḥis dīmā bārīz **so overrated**. manḥibhāš. mumkin ʿağbatnī bāršā espagne, portugal, italie. nḥib ʾil-ḥāğāt méditerranée. kānat grèce mizyanah bāršā bāršā – hākā ʾil-ḥāğāt ʾillī fīhom šwayyah šams. (mmm) fī l’amérique latine, pīrū pīrū kānat **something else**.

Example 7: Translation

Rawan: (1)	and I, thank God, a **time traveler**. I have been to many beautiful countries.
Iman: (2)	What are the three best countries for you?
Rawan: (3)	The three best countries?
Soufia: (4)	Tell us **per continent**.
Rawan: (5)	**Per continent**. let's say for example in **Asia**; I would say India. India was amazing.
Iman: (6)	Where did you go?
Rawan: (7)	I spent five weeks in India, so I could sit and tell you all about the **route** I took. I traveled from the north to the south and spent a lot of time there. In **Europe**, in **Europe**, in Europe, the truth is, I always feel Paris is **so overrated**. I don't like it. But I really liked Spain, Portugal, and Italy. I love Mediterranean places. Greece was really, really beautiful—places with a bit of sunshine. In Latin America, Peru Peru was **something else**.

In this example, CS is used strategically to manage the information structure of the conversation. When Rawan is asked to name the best three countries per continent she has visited, she organizes the information coherently through CS. Switching from MA to English and French when listing continents and specific European countries not only enhances clarity but also mirrors academic practices where information is systematically presented. This pragmatic use of CS ensures that the message is clear and easily understood by the listener, aligning with Muntendam and Parafita Couto's (2024) concept of structuring information through CS.

4.1.1.4 CS for signalling conclusion

It is evident from the analyzed data in this study that participants frequently use French or English to signal the conclusion of their contributions, either directly or indirectly, particularly when they have nothing further to add. This is demonstrated by the occurrence of the codeswitched English discourse marker "that's it" six times and its French equivalent *c'est ça* eight times, while MA was maintained only once to explicitly end a discussion throughout the entire dataset. Additionally, participants in this study often switch to French or English at the end of their turns to summarize

their viewpoints, indirectly signalling the conclusion of their contributions. This highlights how CS functions as a strategic tool for managing conversational structure (Wei, 2005).

The following example illustrates the use of the codeswitched English discourse marker "that's it" to directly conclude the speaker's turn. This instance occurs within the broader context of a discussion on daily routine, where one participant describes his habitual activities. After delivering a long turn detailing his most common routines, the speaker closes his contribution by "that's it."

Example 8:

sāʿāt fammā des occasions nsīrū li-būdābist biš nḥūsū ʿalā … wallā ʿannā programme mtāʿ qāḍyah fil-**mall** wallā ḥāǧah. (aah) **that's it**.

Example 8: Translation

Sometimes there are occasions when we go to Budapest either to look for or because we have a program, like going to the **mall** or something. (aah) **that's it**.

In this instance, the speaker describes part of his daily routine, mentioning occasional trips to Budapest, and then shifts from MA to English to mark the end of his contribution. This aligns with the pattern observed in the data, where participants frequently use the English or French markers "that's it" and *c'est ça* to signal that they have completed their point.

The following example also illustrates this pragmatic function of CS. During a discussion on feminism within the broader topic of women's rights, Hana begins with expressing her support for feminism and providing a brief overview of its background. She explains how the movement has, in her view, been misunderstood and taken to extremes. After a long turn, she concludes her discussion by stating that:

Example 9:

Personnellement – ʾanā maʿ ʾil féminisme **as long as it's rational**.

Example 9: Translation

Personally, I am with feminism **as long as it is rational**.

In the provided example, Hana's use of French and English to conclude her argument illustrates how CS functions as a strategic tool for managing conversational closure. By shifting from MA to French and English at the end of her turn, Hana mirrors a pattern observed throughout the data, where participants frequently switch languages to mark the conclusion of their contributions. This deliberate language switch helps manage conversational structure by clearly signalling the end of her argument, thereby facilitating a smoother transition to the next speaker (Wei, 2005).

4.1.1.5 CS for emotional distancing

It is evident from the analyzed transcripts in this study that words with negative connotations are predominantly used in French or English rather than MA. This practice appears to function as a mechanism for emotional detachment, consistent with Altarriba and Morier's (2006) findings that bilinguals often switch to their L2 when discussing emotionally charged topics, as this can reduce emotional intensity. In the participants' conversations, terms related to negative or distressing concepts—such as "inferiority," "mislead," "anxiety," "depression," "negative effects," "side effects," "guilt," "burden," "drugs," "gangs," "misogynistic," "addicted," and "overwhelmed"—are almost always codeswitched to English or French. This strategy may serve to alleviate the psychological burden associated with these terms, allowing participants to discuss difficult topics with greater emotional distance.

For example, in the following excerpt, which occurs within the broader context technology and communication, the participants talk about the impact of social media on their lives. They highlight the negative effects of social media, specifically how it portrays an exaggerated sense of happiness in others, which makes them feel inadequate or unhappy when they compare their own lives to what they see online.

Example 10:

Dina: (1) ḫāybah ʾal-ḥaqīqah. *sūšāl mídīa sūšāl mídīa* tḥassisak ʾinnak **inadequate** ḥattā kān ʾantī muš nāqiṣ. yaʿnī muš biḍ-ḍarūrah ʾanā ka-ʿabd ʾanā kīmā ʿumrī sabaʿtaʿiš muš kīmā ʿumrī ʿišrīn miš kīmā ʿumrī ḫamsa-w ʿišrīn. tawwa ʾanā lā nšūf fī ʾil-**stories** wa-lā nšūf fī ʾil -**updates**.

Rawan: (2) consciente.

Dina: (3) nibdā consciente bil-ḥāǧāt, ʾammā ʾanā ʿumrī ṯamantaʿš wallā tisʿataʿš nibdā fī dārnā ʾakṯar ḥāǧah naǧǧim nimšīlha hī wilāyah ʾuḫrā fī tūnis baʿīdah sāʿtīn. wa narā ʿabd ʾāḫar ʿandū nafs ʾal-ʿumr mtāʿī wi-ysāfrū wa dār li-**Europe** ʾil-kull. šitǧīk kīfāš nqūl sensation d'insécurité. tqūl huwwa kīfāš ʿāyiš.

Rawan: (4) wa infériorité zādah.

Dina: (5) infériorité. wahlā ma-nʿirafš ʾintī tkūn fī **relationship** wa tarā ʿibād ʾaḫrīn mhabtīn **relationship** mtāʿhum tkūn saʿīdah/ wa farḥānīn/ – **you compare** …

Example 10: Translation

Dina: (1) It is really disappointing. *Social media social media* makes you feel **inadequate**, even if you are not. For me, being 17 is not the same as being 20, and being 20 is not the same as being 25. Now, I do not even look at the **stories** or **updates** anymore.

Rawan: (2) Conscious.

Dina: (3) I am more conscious now, but when I was eighteen or nineteen, the furthest I could go was to another city in Tunisia, two hours away from my home. Then, I see someone my age traveling all over **Europe**. How to say it? It gives you this sensation of insecurity. You start wondering, how is he living like that?

Rawan: (4) And also inferiority.

Dina: (5) Inferiority, exactly. Or, I do not know, you could be in a **relationship**, and then you see other people posting about their happy, joyful **relationships**, and you start **to compare**.

In this example, the CS to French and English serves a pragmatic function by allowing participants to express negative emotions and concepts (inadequacy, insecurity, inferiority) with a degree of emotional detachment. It is important to highlight that this use of CS is also closely related to semantics. The English and French words used in this context are believed to carry less intense connotations than their MA equivalents, enabling participants to discuss distressing feelings more comfortably. This observation is further supported by data from the metalinguistic interviews[1],

[1] For quotes from metalinguistic interviews, Arabic text is in normal font, French text is underlined, and English text is bold (see Appendix I).

where participants commented on their use of these negative terms, stating, “I feel less disturbed when using similar words in a language other than Arabic,” and, “In Arabic, these words feel heavier and more hurtful.”

4.1.1.6 CS for message qualification

The use of CS for elaboration and clarification in bilingual speech is well-documented in previous literature (e.g., Chaiwichian, 2007; Gumperz, 1982). This pattern is evident in the data from this study, where participants frequently employ CS to offer further clarification or additional details.

Moreover, the metalinguistic interviews in the current study reveal that participants often feel lexically restricted to express themselves when relying solely on MA for explanations. One participant specifically commented, “I will be **blocked** to try to use Arabic only,” when asked about his insertion of multiple French expressions while explaining his stance on the impact of technology on people’s lives. In such instances, CS functions as a strategy to access a wider range of linguistic resources, enabling participants to articulate their thoughts more effectively. This behavior facilitates communication by allowing multilingual individuals to adapt to different linguistic systems and better convey their intended message. It also reflects their cognitive flexibility, as noted by Mepham and Martinovic (2018), who highlight that multilinguals exhibit “an enhanced flexibility in understanding and representing information” (p. 51).

For example, in the following excerpt, which occurs within the broader context of a discussion on technology and communication, Rashed tries to explain his stance on the impact of technology on people’s lives in response to the researcher’s assistant’s question: “Do you think technology has made our lives easier or more complicated?”

Example 11:

bon – huwwah ʾis-suʾāl hāḏa ʾil-ḥaqq mṭāʿ rabbī ma-tnağğimš tğāwib ʿalayh fī kilmah waḥdah. wa ma- tnağğimš tğāwib ʿalayh ḥattā fī bāršā kalimāt wa bāršā ğumal. *may* hāw baš nḥāwil nlaḫḫiṣ. rāhū dīmā ʾir-rāy lī baš naʿṭīh wallā-al-kalām lī baš naḥkīh dīmā baš ykūn maʿnāhā valide fī des conditions muʿayyanah wa sous des circonstances maʿayyanīn. ḫāṭir yastahīl maʿnāhā … le parfait n’existe jamais. ma- tnağğimš ḥāğah rāy tnağğim t-appliquer-kīhā ʿalā kull šī. pour moi – la technologie maʿnāhā est un arme à double tranchant.

Example 11: Translation

Well, this question is really one that, to be honest, you cannot answer in just one word or you cannot even answer it with many words or many sentences. *but* I will try to summarize: the opinion I give, or the words I say, will be valid only under certain conditions and certain circumstances, because it is impossible … A perfect thing never exists. You can never apply one opinion to everything. For me, technology is a double-edged sword.

In this excerpt, Rashed addresses a question about the impact of technology on people's lives. His response highlights the challenges of providing a straightforward answer, emphasizing the complexity of the topic. To clarify his opinion, Rashed inserts multiple French expressions throughout his response and uses phrases such as "*le parfait n'existe jamais*," and "*un arme à double tranchant*" to convey his stance. It is important to note that beyond this excerpt, Rashed continued with a lengthy turn in which he incorporated many English and French words and expressions, further enriching his explanation, though these cannot be fully presented here due to space constraints. This use of CS allows him to draw upon a broader linguistic repertoire to explain his stance more effectively.

4.1.1.7 CS for setting off side-remarks

According to the data from this study, participants often use CS from MA to either French or English to add side comments. This strategic use of CS effectively creates a boundary between different speech activities, allowing speakers to distinguish between the main discourse and supplementary remarks. This finding aligns with Auer's (2007) discussion of CS as a pragmatic resource for organizing discourse. This use of CS reflects the speakers' ability to leverage language choice for communicative purposes.

For example, in the following excerpt Faith discusses her daily habits within the broader context of daily routine. While speaking, she switches from MA to English to interject a brief aside.

Example 12:

niqraw fiṣ-ṣabāḥ birkā wallā fil-'ašiiyah birkā. kī niqraw fiṣ-ṣabāḥ nḥibb nqūm bikrī šwayyah baš naǧǧim nifṭar fṭūr ʾiṣ-ṣabāḥ fī rāḥtī. (wū:) nimšyū niqraw ʿalā-r wāḥnā kī nrūḥū généralement

nṭayybū lifṭūr maʿ baʿḍnā. wa mbaʿdīkā kān ʿandī waqt fīl-ʿašiyyah niqraw wa nuḫruǧ šwayyah. **there are a lot of good places to see here and everything**. wa fil-līl …

Example 12: Translation

I study hard either in the morning or in the afternoon. When I study in the morning, I like to wake up a little early so that I can have breakfast at my leisure. And I go to my classes, and when I come back, we usually cook lunch together. After that, if I have time in the afternoon, I study and go out a little. **There are a lot of good places to see here and everything**. And at night …

In this excerpt, Faith primarily discusses her daily habits in MA, but switches to English for the aside "There are a lot of good places to see here and everything." This switch serves to set off the aside as a comment that is supplementary to her main point about her daily routine. The switch to English signals that this remark is a parenthetical comment providing additional context, rather than central to the description of her daily habits. This illustrates the participants' strategic use of CS as a resource for organizing discourse.

4.1.1.8 CS for conventional terms

According to Clark (1992), language use is shaped by pragmatic principles that help speakers effectively convey their intentions. One key principle is *conventionality*, which involves relying on *the established lexicon*—terms whose meanings are widely recognized within a language community. Clark (1992) explains that "if there is a conventional term already available, the speaker must make use of it. . .to make sure he will be understood by his addressee," as failing to do so increases the risk of misunderstanding (p. 172). Conventionality, therefore, plays a vital role in "smoothing the path for communication" by ensuring mutual understanding (Clark, 1992, p. 172).

The findings from this study reveal how the principle of conventionality influences participants' CS practices. The data show that terms in French and English are often more conventional than their MA equivalents in domains such as education and travel. Participants consistently switch from MA to French or English when using terms such as "lecture," "assignment," "test," "exam," "class," "ticket," "attraction," "flight," and "experience," to mention but a few. This behavior suggests that these terms are perceived as more conventional in French

and English among the participants, reflecting the participants' greater familiarity with these languages in relevant contexts.

For example, in the following excerpt, which takes place within the broader context of travel, Amanda and Maria share details with Dania about their upcoming flight in Europe. The participants switch from MA to English or French for the terms "flight," "assignments," and "*les examens*."

Example 13:

Amanda: (1)	mil-ʾawwil kunnā māšyīn – mil-ʾawwil kunnā māšyīn stawkhawlm. ḫāṭir laqīt stawkhawlm nafs ʾil-**flight**. maʿnāhā ʾil-**cheap flight** kīma kīma brawksil wa kull šay. nafs-il *hawstil* kīf kīf rḫīṣ – byaʿṭī **free breakfast**.
Maria: (2)	**free breakfast**. ʾayh.
Dania: (3)	šḥāl?
Amanda: (4)	vingt-cinq euros.
Maria: (5)	rānī nqullik. kānat ʾil-**flight** kullhā bi-ḫamsīn ʾalf fawrint.
Dania: (6)	ʾanā kūn mašī ʿandī **assignments** wa les examens. kūn rānī **join**-atkum.
Amanda: (7)	ḥinnā zādah ʿandnā **assignments**. ʾammā hākā haw.

Example 13: Translation

Amanda: (1)	From the beginning, we were planning … From the beginning, we were planning to go to Stockholm. Because I found that the **flight** to Stockholm was just as **cheap** as the **flight** to Brussels, and everything else was the same. The *hostel* price was also similar—cheap—and it offers **free breakfast**.
Maria: (2)	**Free breakfast**. Yes.
Dania: (3)	How much?
Amanda: (4)	Twenty-five euros.
Maria: (5)	I am telling you, the entire **flight** was 50,000 forints.
Dania: (6)	If I did not have **assignments** and exams, I would have "**join**-atkum" (join you all).
Amanda: (7)	We also have **assignments**, but that is just how it is.

This example demonstrates how the principle of conventionality shapes the participants' use of CS for terms such as flight, assignments, and *les examens.* Amanda switches from MA to English for "flight" in turn 1. Maria also uses "flight" in English in turn 5, further reinforcing its conventionality in this domain. In turn 6, Dania switches to English for "assignments" and to French for "*les examens,*" reflecting the perception that these terms are more familiar in these languages. The participants' reliance on CS for these terms highlights their use of the most widely recognized lexicon within their multilingual repertoire, ensuring clarity and mutual understanding in contexts such as education and travel.

Support for this observation comes from metalinguistic interviews, where participants expressed various reasons for preferring French or English. Responses such as, "I feel that some words are **fossilized in my mind**," "I know the equivalent in Arabic, but **I feel more comfortable** using English and French," "**I usually share information about my travel in English**," "For me, I feel that they are **more expressive** in English or French," and "I was afraid that they wouldn't understand me if I used Arabic," "Because of my education, Arabic equivalents sound **unfamiliar**," and "Everyone uses these **applications and websites in English or French** so these words are **unfamiliar** in Arabic," were given by the participants when asked about their switching to English or French for key words related to education and travel.

In conclusion, by choosing terms that are more conventional in French and English than in MA, particularly in the domains of education and travel, the participants aim to ensure clearer communication. This finding emphasizes how conventionality shapes language practices, reinforcing the use of conventional terms to achieve communicative efficiency.

Overall, the analysis of pragmatic functions reveals how participants strategically use CS to achieve various communicative goals. CS serves as a deliberate tool for showing contrast, highlighting important information, organizing discourse through listing, signalling conclusions, and setting off side-remarks. Participants also use CS for emotional distancing when discussing emotionally charged topics, as well as for message qualification to offer further elaboration or clarification. Moreover, the principle of conventionality influences their CS practices, as participants consistently switch to French or English for widely recognized terms in domains such as education and travel to ensure clearer communication.

4.1.2 Semantic functions

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.

4.1.2.1 CS for business, technology, and power terminology

As explained from the outset (Section 4.1), some instances of CS are complex and resist straightforward classification, varying based on the analytical perspective. This complexity aligns with Stroud's (1992, as cited in Woolard, 2004, p. 84) observation that "one instance of code-switching could be performing one or a manifold of different functions simultaneously." The use of CS for business and technology terminology exemplifies this complexity. From a cultural perspective, in the context of NA, French and English are perceived as the languages of business and technology (Brown, 2020; Daoud, 2001). This perception may explain the prevalent switching from MA to French and English for such terms by the participants in this study, where CS to French or English serves as a marker of sophistication and education. However, there may also be a semantic dimension to this linguistic behavior, where French and English are seen by the participants as more expressive for business and technology vocabulary, conveying specificities that MA may not capture effectively. In this case, French and English confer specific connotations on business and technology terminology, evoking distinct mental representations or frames (Kövecses, 2006) in the minds of the speakers and listeners. Frames, in this context, refer to cognitive structures that evoke a set of interrelated concepts or ideas associated with a particular topic. To clarify, when participants use French or English for business and technology terms, these languages may evoke mental images that go beyond mere translation, shaped by their perception of reality and global knowledge. For instance, using English or French might bring to mind a sense of a globalized, modern world where economic growth, technological advancement, and speed are prioritized.

A clear observation from the data is the participants' consistent CS from MA to English and French when referring to business- and technology-related terminology across various contexts. For instance, the word "tax" is used 11 times in English but never in MA. The term "payment" appears three times in English and twice in French (*paiement*), but is not used in MA. Similarly, "interview" and "meeting" are used six times in English, without any occurrences in

MA. The word "budget" appears equally in English and French (*budget*), eleven times each, while the MA equivalent *mīzānīyyah* is used only once.

Regarding technology-related terms, the word "communication" is used six times in English, once in French (*communication*), and only once in MA (*tawāṣul*). The term "account" appears seven times in French (*compte*) and four times in English, but never in MA. Similarly, "contact" is used eight times in French (*contact*) and twice in English, with no occurrences in MA. The French word *application* appears 15 times, while the MA equivalent *taṭbīq* is not used at all. Likewise, "search" appears twice in English and six times in French (*recherche*), but never in MA.

Even terms frequently used in MA also appear often in English and French. For instance, the MA word *tiknawlawğya* ("technology") is used 27 times, while its English equivalent is used 10 times and the French equivalent *technologie* 26 times. It is important to note that all these business- and technology-related terms have MA equivalents, yet there is a clear preference for French and English.

A very important point to highlight is that this same use of French and English can also be observed in the analyzed data with terms related to other domains, such as power. Specifically, the terms "influence," "impact," "control," and "authorization" are used exclusively in either French or English, but never in MA. To provide further details, the word "influence" appears six times in French (*influence*) and once in English. The word "impact" is used twice in English. The word "control" is used four times in French (*contrôler*) and three times in English. The word "authorization" is mentioned four times in French (*autorisation*).

This exclusive use of the terms "influence," "impact," "control," and "authorization" in either French or English, and their absence in MA, reveals more than a simple preference for vocabulary. This linguistic behavior reflects historical and contemporary realities, where the West has long projected its influence over political and economic spheres in the East. The participants' reliance on French and English rather than MA to articulate concepts of power suggests that these languages function not merely as tools of expression but as symbols, with the lexicon of power aligns with Western authority.

Building on these observations, the participants' dominant use of French and English for business, technology, and power-related vocabulary appears to reflect deeper cultural conceptualizations, where these languages are perceived as the languages of business, technology (Daoud, 2001; Nickerson, 2005), and power. As a result, participants attach specific connotations

to French and English when expressing ideas in these domains. This finding aligns with Geeraerts' (2006) view that meaning is "encyclopedic and non-autonomous," integrated with broader cultural knowledge, and grounded in "usage and experience" (pp. 4–5).

This interpretation is further supported by data from the metalinguistic interviews, where participants provided responses such as, "Arabic is not the first language that comes to mind for **business**," "I usually discuss **financial issues in English**," "I feel these words are **more expressive** in English and French than in Arabic," "I know the Arabic equivalents, but I feel that they don't give the intended meaning," "For me, influence is **more powerful** in French than in Arabic," when asked about their switching to English and French for business, technology, and power terminology.

To give an example from the data, in the following excerpt, participants discuss the usefulness of technology in people's life, especially in the field of online jobs within the general topic technology and communication.

Example 14:

Rashed: (1) ḫāṭir maʿnāh fammak ʾil-**virtual machine** lī maʿnāh tconnecter ʿalayhā du coup ʾinta gāʿid tiḫdim maʿhum w-inta *ǧūst* min *blāṣtak* fid-dār, voilà.

Gabriel: (2) exactement.

Rashed: (3) yaʿnī ʾil-ḥājāt lī (ā:h) t'as besoin bāš tiḫdim bil-ḥaqq bāš tiḫdim yaʿnī waʿandak présence wa wrāq wa kaḍā. miš *ǧūst* maʿnāhā bāš tiʿmal **meeting**. lā lā bāsh tiḫdim tiḫdim **literally**. maʿnāhā *ǧūst*ʿandak connexion internet – c'est ça.

Example 14: Translation

Rashed: (1) Because there is the **virtual machine**, which you connect to, so you are working with them while you are *just* at *home*, that's it.

Gabriel: (2) Exactly.

Rashed: (3) It means having everything you need to actually work—presence, paper, and more. It is not *just* about holding a **meeting**; no, it is about truly working, **literally**. All you *just* need is an internet connection, and that's it.

In this example, the codeswitched English terms "virtual machine" and "meeting," along with the French terms *connect* and *connexion internet*, are insightful instances of CS. This CS reflects the

participant's perception of English and French as closely associated with business and technology. Although MA equivalents exist— *ʾālah iftirāḍīyyah* ("virtual machine"), *yattaṣil ("connect")*, *ʾiğtimāʿ* ("meeting"), and *ʾittiṣāl bil-ʾintarnit* ("*connexion internet"*)—the participant opts for the English and French terms.

To give another example, while discussing the general topic women's rights and emphasizing the importance of achieving gender equality in terms of salaries, one of the speakers codeswitches to use the French word *salaire* instead of continuing in MA using the MA equivalent *šahrīyyah*.

Example 15:

Kinda: (1)	ʾawwal ḥaqq ʿandnā ʾannuh ar-rājil fī tūnis mā yitzawwağiš bi-ʾarbaʿat nisāʾ.
Radwan: (2)	ʾiḥnā fīl-ğazāʾir yitzawwaj bi-ʾarbaʿa.
Gloria: (3)	ʿalā ʾal-ʾaqall hākā sādid ʿalaynā bāb balāʾ.
Kinda: (4)	**one woman man**. *dunk* haḏākā *dayğā* ʿandnā ʾaḥsan ḥaqq. wil-ḥaqq ʾath-thānī ʾannuh ʾal-mra war-rājil yiḥalṣū nafs salaire. yaʿnī (aah) pour le même travail. ʿandnā parité fī salaire ʿandnā parité fī kull šī ʾammā mā zālat bayn-al-qānūn w-al-pratique lissātuh fī šwayyat mašākil bil-ḥaqq.

Example 15: Translation

Kinda: (1)	The first right we have is that in Tunisia, a man is not allowed to marry four women.
Radwan: (2)	In Algeria, a man can marry four women.
Gloria: (3)	At least this way, it prevents potential problems.
Kinda: (4)	**A man can marry only one woman**, *so* that is *already* the best right we have. The second right is that women and men are paid the same salary, I mean, for the same job. We have parity in salary, parity in everything. But there are still some issues between the law and practice, to be honest.

In this example, the speaker's choice to codeswitch to the French word *salaire* reinforces the participants' perception that Arabic is less associated with business.

To give one final example from the data, the following excerpt is taken from a discussion between Rose and Yaser on the topic of technology and communication. In her previous turn, Rose expresses strong opposition to modern technology, particularly platforms like Instagram and TikTok, explaining that she only uses Facebook to stay in touch with friends and family. She believes that today's technology contributes to societal decline. Yaser agrees, emphasizing the negative aspects of social media content. Rose then continues to voice her opposition, adding that it is difficult to control the time spent on these platforms, acknowledging how easily hours can slip away while scrolling through videos and reels.

Example 16:

Yaser: (1)	**exactly/** la majorité **of the content is** – –
Rose: (2)	Mankadbuš. wa même ntiyyā des fois matiqdarīš t-contrôler rūḥak. win-tiyyā est-ce que tiqdrī t-contrôler rūḥak wit-qūlī non. nḫaṣṣiṣ ʾil-faysbūk hāḏā willā les réseaux sociaux sāʿah fil-nhār lil-contact. tilqāy rūḥik dāḫlah min **reel** la-**reel** wa min v*īdyū* la-v*īdyū*. tlqāy ṯlāṯ swāyiʿ rabiʿ swāyiʿ rāḥū. fhamtī?

Example 16: Translation

Yaser: (1)	**Exactly**, the majority **of the content is** …
Rose: (2)	I will not lie. Even you sometimes cannot control yourself. How can you control yourself and say no I will dedicate Facebook or social media to just one hour a day for contact? You will find yourself scrolling from **reel** to **reel** and from *video* to *video*, and before you know it, three or four hours have passed. Do you understand?

The provided example accentuates the participants' use of French and English for terms related to technology and power. The words "content," "contact," "social media," and "control" are used in English or French. This linguistic choice reflects broader cultural conceptualizations among the participants that position French and English as the languages of technology and power.

In conclusion, the dominant use of English and French for terms related to business, technology, and power, regardless of context, reflects the elevated status of these languages compared to Arabic in these domains.

4.1.2.2 CS for conceptual shifting in meaning

Meaning is not fixed but is continuously shaped by both experience (Diessel, 2017; Fillmore, 2006; Geeraerts, 2006) and culture (Sharifian, 2011, 2017). The analyzed data in this study support this claim, demonstrating that language choice reflects the mental image or cultural associations of a word in specific contexts.

To illustrate it from the analyzed data, the English word "kitchen" is used by participants to describe a small, crowded, shared cooking space in a dormitory setting, reflecting a specific context. In contrast, the French equivalent *cuisine* or the MA equivalent *kūǧīnā* is employed when discussing kitchens in a more general sense. This observation is further supported by data from the metalinguistic interviews, where participants provided responses such as, "For me, a **kitchen** is just a small space where I can barely move around, not really like a *kitchen* at home," and "I do not think of it as a real kitchen," when asked about their switching to English for the word "kitchen" in certain contexts.

To give an example, in the following excerpt, Shaher describes his daily routine. He codeswitches to use the English "kitchen" in this context, highlighting its description as an overcrowded space.

Example 17:

ʾaqra – ʾa‘mal résumé lil-article hāḏā. wim-baʿd ʾāh nasīt mafṭartiš lāzimnī nimšī nṭayyib. timšī lil-**kitchen**, talqāh sāʿa maʿbyah bil-les africains wil-hnūd. tqulhum salām ʿalaykum. tarǧaʿ maʿnāhā muš lāzim nākul.

Example 17: Translation

I read and make a summary of this article. And then, oh, I forgot to have breakfast. I need to cook. I go to the **kitchen** to find it crowded with Africans and Indians. I say "good bye," and then I go back. I do not need to eat.

However, the same speaker uses the MA equivalent *kūǧīnā* in a different context, referring to the kitchen in a more general sense. In the following excerpt, Shaher discusses the challenges a woman faces when pursuing higher education, as she balances her time between studying, the kitchen, and household responsibilities

Example 18:

li-ʾannū niʿraf fī: – personnellement fil-ʿāylah tāʿī, niʿraf škūn tkammil fid-duktawrāh tāʿhā. wa kīf kīf ʾumm li-des enfants. *dawnk* taṣawwar ʾint bayn ʾil-**study** tāʿhā wil- *kūğīnā* wil-**house**.

Example 18: Translation

Because I know. In my family, I personally know someone who is completing her PhD. And at the same time, she is a mother of children. *So*, imagine her balancing between her **study**, the *kitchen*, and the **house**.

An additional observation from the data shows that while the English word "Friday" and the MA term *ğumʿah* both appear frequently, they are used in distinct contexts that reflect different cultural conceptualizations. In Arabic, *ğumʿah* is imbued with sacredness, associated with worship for Muslims. It is used in contexts where religious and cultural connotations are evoked. Conversely, the English "Friday" is employed in contexts where such associations are absent. This usage aligns with Stavans' (1992) concept of culturally-bound CS, where terms like the Hebrew *shabbat* carry cultural and religious meanings that transcend their lexical equivalents in other languages. Thus, the choice between *ğumʿah* and "Friday" illustrates how speakers have distinct cultural conceptualizations of the same day.

For example, in the following excerpt, Rawan recalls her experience during a visit to India. She describes meeting a woman who leads an organization specializing in voluntary work related to education. The woman invites Rawan to join the organization for some volunteer work, but Rawan apologizes, explaining that she is leaving next Friday.

Example 19:

qult laha nḥibb. qālat lī, ʾiḥnā *stāğ* mtāʿnā minimum trois mois. qult laha rāhū ʾanā ṣaʿīb ʿalayyah yāsir. ʾanā biš nrawwaḥ ʾil-**Friday** ʾil-jāyyah.

Example 19: Translation

I told her I was interested. She told me their *internship* was a minimum of three months. I told her it was really hard for me because I was going back home next **Friday**.

In this example, Rawan uses the codeswitched English word "Friday" instead of the MA equivalent *ǧumʿah*, as the context requires no need to evoke the religious or cultural associations tied to the MA term.

In conclusion, the above examples from the data suggest that language choice of certain terms involves more than just lexical accuracy; it involves engaging with distinct conceptualizations of objects or concepts based on the participants' experiences and cultures.

4.1.2.3 CS for terms in the domain of intellectuality

According to Riehl (2005), bilingual speakers do not always switch languages with a deliberate conversational purpose. Sometimes, CS occurs unintentionally, without a specific function in the immediate conversational context, and is instead driven by underlying cognitive processes in the speaker's brain. Sharifian (2011, 2017) argues that language, culture, and thought are interconnected. These assumptions may help explain the finding in the present study participants frequently codeswitch from MA to English or French for words such as "notion," "concept," "idea," "plan," "think," "know," "mentality," "conscious," "process," "logical," "rational," "awareness." This preference for French and English over MA for terms related to thinking and planning suggests that these languages may carry specific connotations associated with abstract thought. Moreover, the analyzed data show that this type of CS lacks a specific conversational function, occurring automatically in various contexts.

For example, in the following excerpt, which takes place within the broader context of a discussion on women's rights, Hana responds to the researcher's assistant's question: "Have women in Tunisia achieved their rights, or is further advocacy needed?" Hana emphasizes the challenges Tunisian women face in Tunis despite formal legal progress. She clarifies that the issue is not one of legal equality, as the law grants women equal rights, but rather a matter of societal attitudes. She highlights concerns such as public safety, noting that women often feel insecure walking at night due to pervasive social behaviours and attitudes—contrasting this with the situation in Europe.

Example 20:

ʾammā waqt lī timšī li-tūnis wit-ʿīš fī tūnis maʿnāha wi-tikūn muwāṭin tūnisī. tḥis fammā ḥājāt mahīš matāʿ qānūn. fammā ḥājāt fil-mentalité wil-conscience tāʿil-liʿbād lī lāzimha titbaddal. ḥāṭir

maṯalan fī tūnis ... maṯalan hnā tawwā naǧmū naḫuruǧū maṯalan fil-līl. maniʿraf waqtāš bil-līl mitʾaḫḫar. wi matḥissiš rūḥak makš en sécurité. tḥis rūḥak tamšī win-tī ʾāmnah fiš-šāriʿ.

Example 20: Translation

When you go to Tunisia and live there as a Tunisian citizen, you realize that there are issues that are not about laws. There are aspects of people's mentality and conscience that need to change. For instance, in Tunisia … On the other hand, here (in Europe), we can go out at night—no matter how late—and not feel insecure. You feel like you can walk completely safe on the streets.

This example illustrates a notable instance of CS where the terms "mentality" and "conscience" are expressed in French, even though the broader conversation occurs primarily in Arabic. As Sharifian (2011, 2017) suggests, language, culture, and thought are interconnected, and Hana's use of French for these terms may indicate an implicit association of French with intellectual discourse and abstract reasoning. By choosing French for "mentality" and "conscience," Hana unconsciously aligns with the broader perception of French as a language suited for discussing abstract ideas, reinforcing its role in shaping thought and discourse.

Metalinguistic interviews further support the observation that participants engage in this behavior automatically and without a deliberate purpose. They provided responses such as "Because of making a **logical** explanation, **I found myself talking in French and English**," "I like to use French and English for these words," "I have no reason," and "These words always **come first to me** in French or English." These responses indicate a subconscious preference for using French and English for intellectual terms. Thus, it appears that French and English have gained the status of being the primary languages for thinking and planning among these individuals, reflecting their influence on the participants' cognition and linguistic choice.

4.1.2.4 CS for critical evaluation

Halmari (1993) highlights the relationship between evaluation and CS in spontaneous bilingual conversation, stating that "one of the functions of code-switching is indeed evaluation" (p. 114). Labov and Waletzky (1967, as cited in Halmari, 1993) define evaluation as the part of a narrative where speakers express their attitudes towards the content, while also emphasizing that evaluation serves to highlight important information.

A notable observation from the analyzed conversations is that CS from MA to English or French frequently coincides with evaluation. This pattern becomes evident when examining the evaluative adjectives across the transcriptions. It seems that this type of CS fulfils both semantic and pragmatic functions. From the perspective of semantics, English and French appear to have become the primary languages for evaluation among the participants in this study, suggesting that these languages are perceived as more powerful for conveying assessments and opinions. This preference may also reflect cognitive associations, with participants subconsciously perceiving French and English as more suitable for critical thinking and evaluative tasks. This reinforces their roles as languages of judgment, aligning with the broader observation that these languages are favoured for terms of intellectuality within this group (see Section 4.1.2.3). From the perspective of pragmatics, CS for evaluation may also serve to highlight the codeswitched elements.

To illustrate, in the following excerpt, participants discuss wedding traditions from their home countries in the context of cultural celebrations. Rose, an Algerian, expresses her shock at the Moroccan tradition of holding a wedding years after marriage. Yaser, a Moroccan, explains the reasoning behind this custom, citing economic circumstances as the main factor. After Yaser's lengthy explanation, the following exchange takes place:

Example 21:

Rose: (1)	*dawnk* – ḥinnā hāḏī impossible kāynaf fī dzāyir. wa hāḏi bqāt …
Yaser: (2)	dābā wa hāḏī hiyya-l **solution** lī laqāw. lhāḏā-s sabab hāḏā lī huwwa **best solution**.
Angela: (3)	ḥatta ʾiḥnā impossible tṣīr fī tūnis. baš tkūn bizarre ʿal-āḫar.

Example 21: Translation

Rose: (1)	*So*, for us, this is impossible in Algeria. And this has become …
Yaser: (2)	Now, this is the **solution** they found. For this reason, for me, this is the **best solution**.
Angela: (3)	Even for us, it is impossible to happen in Tunisia. It would be really strange.

In this example, the French and English evaluative adjectives *impossible*, best, and *bizarre* highlight the participants' assessments of the discussed tradition. Rose and Angela both use *impossible* to express strong negative judgments, while Yaser uses "best" to positively evaluate the solution. These adjectives fulfil both semantic and pragmatic functions.

Overall, the analysis of semantic functions shows how participants use CS to reflect cultural and cognitive associations. CS is employed for business, technology, and power terminology, where French and English are perceived as the languages of business and authority, evoking mental representations shaped by cultural knowledge. CS for conceptual shifting reflects how participants engage with distinct conceptualizations based on their experiences and cultures. For terms in the domain of intellectuality, CS occurs automatically, with French and English seen as primary languages for abstract thought. Finally, CS for critical evaluation highlights assessments and opinions, with French and English perceived as more powerful and more suitable for expressing judgments.

4.1.3 Linguistic functions

Linguistic functions involve the use of CS for coping with dysfluencies and economy of expression.

4.1.3.1 CS for coping with dysfluencies

In their study, Manivannan and Maruthy (2024) identify CS as a key strategy for bilingual adults who stutter (BAWS) to manage dysfluencies. Participants reported using CS to handle word retrieval issues, among other challenges (Manivannan & Maruthy, 2024, p. 430). It is important to note that, although their study focuses on BAWS, their findings align with previous research on bilinguals without stuttering, where CS is similarly used to compensate for momentary word retrieval difficulties in a given language (Auer, 2007; Kharkhurin & Wei, 2014). This suggests that CS serves both a linguistic function—coping with word retrieval—and a pragmatic function by maintaining speech fluency.

Findings from the present study further support the role of CS in managing linguistic challenges. Based on the analyzed conversations, participants predominantly switch from MA when struggling to retrieve the right word(s), a practice often marked by phonetic prolongation. For example, the phonetic prolongation of the letter *l* in the Arabic definite article *ʾal* (“the”) occurs 32 times in the dataset and is always followed by a switch to French or English. The same pattern is observed across the dataset with other words, such as the phonetic prolongation of the letter *ī* in the Arabic preposition *fī* (“in”), which appears eight times and is consistently followed by a switch. This phonetic prolongation reflects the speakers’ “(momentary) lack of competence” (Auer, 2007,

p. 167). By switching languages, participants effectively navigate this linguistic challenge, ensuring the smooth flow of their speech.

The following excerpt is from a discussion among participants about the impact of technology on our lives within the context of technology and communication. Amir begins his turn highlighting an issue with using Google Maps, noting that the names of places are provided in Hungarian, then he mentions how ChatGPT helps resolve this issue. Amir states:

Example 22:

lākin ʿlāš ʾil-muškil lī lqītū fī: **when looking for places with google maps**. **mostly the names in hungarian**. **i need to look for the names in english**. **so i ask chatgpt**.

Example 22: Translation

But the problem I found is in … **when looking for places with Google Maps, the names are mostly in Hungarian. I need to look for the names in English, so I ask ChatGPT**.

In the provided example, the phonetic prolongation of the letter *ī* in the Arabic preposition *fī* reflects cognitive effort as Amir struggles to retrieve the correct words to express himself. By switching to English after the phonetic prolongation, he effectively overcomes the linguistic challenge of word retrieval, ensuring the continuity of his speech.

4.1.3.2 CS for economy of expression

A prominent observation from the data of the present study is that participants switch from MA to English or French to use words that do not have single-word equivalents in MA; rather, two or more words in MA are required to convey the desired meaning. For example, words such as "infrastructure" (*ʾal-bunyatu-t taḥtiyyah*), "architecture" (*ʾal-fannu-l miʿmārī*), "freelance" (*ʾal-ʿamalu-l ḥurr*), "maximum" (*ʾal-ḥaddu-l ʾaqṣā*), "zoo" (*ḥadīqatu-l ḥaywānāt*), "charity" (*ʾal-ʿamalu-l ḫayrī*), "Mediterranean" (*ʾal-baḥru-l ʾabyaḍu-l mutawaṣṣiṭ*), "center" (wasaṭu-l madīnah), and "gym" (*ʾannādi-r riyāḍī*) are typically expressed in English or French. The participants also codeswitch from MA to English or French to use shortened forms of words, which MA does not readily offer. For instance, words like "lab" (*muḫtabar*), "ad" (*ʾiʿlān*), "AI" (*ʾaḏḏakāʾu-l liṣṭināʿī*), "app" (*taṭbīq*), "dorm" (*sakan ğāmiʿī*), "bike" (*basklayt*), and "prof"

(*brawfīsawr*) appear only in English or French, as MA equivalents are not shortened in the same way. In the domain of pragmatics, this CS to English or French facilitates brevity in communication. However, from a linguistic perspective, this type of CS primarily reflects the lexical differences between MA, French, and English, which influence the speakers' decision to codeswitch.

Metalinguistic interviews further support the observation that participants codeswitch to English or French for brevity. Participants provided responses such as, "These words are shorter in English or French," and "**I feel more comfortable** using English or French for certain words because they are short." When asked about their preference for switching from MA to English or French for the words mentioned above.

Overall, the analysis of linguistic functions reveals how participants use CS as a strategy for coping with dysfluencies and achieving economy of expression. CS for coping with dysfluencies occurs when participants struggle to retrieve the right word(s) in MA, often marked by phonetic prolongation. Switching to English or French allows them to overcome this linguistic challenge and ensure the smooth flow of speech. CS for economy of expression is observed when participants switch from MA to English or French to use words that do not have single-word equivalents in MA or to adopt shortened forms, which MA does not readily offer. From the perspective of pragmatics, this facilitates brevity in communication, while from the perspective of linguistics, it reflects the lexical differences between MA, French, and English.

4.1.4 Sociocultural functions

Sociocultural functions involve the use of CS for marking identity, expressing individualistic values, and conveying concepts with negative attitudes.

4.1.4.1 CS for marking identity

The role of CS as an identity marker is well established in the literature, with numerous studies emphasizing its importance across various sociolinguistic contexts (e.g., Gumperz, 1982; Auer, 1984; Hoffmann, 1991; Myers-Scotton, 1995; Lawson & Sachdev, 2000; Bouzemmi, 2005; Stell, 2015; Chan, 2019). These works demonstrate that CS functions not only as an effective communicative strategy but also as a crucial marker of social and cultural identity.

Observations from the analyzed conversations in the present study further support this claim. Participants consciously accommodate the language of the preceding speaker or employ similar linguistic elements, demonstrating in-group membership and reflecting their identification with the speaker.

For example, in the following excerpt, taken from a discussion about daily routine, Rawan expresses her frustration with how busy she is due to both work and study commitments.

Example 23:

Rawan: (1) w-allahi ʾanā ʾil-ʾayyāmāt haḏūmā ʾil-kul ḫāṭir tawwa ʿannā ʾil-**interviews** matāʿ ʾil-**ambassador** ʾillī biš tīǧī. fal-ʾusbūʿ kullah ʿandī **interviews** min **two-thirty** ḥattāš **four thirty-five** kul yawm.

Soufia: (2) toute la semaine?

Rawan: (3) toute la semaine et la semaine ʾillī baʿadhā. ǧānī hākkā maʿ ramaḍān ḥaṭūhūlī. s*īnaw* – šnī qāʿdah niʿmal ʾāḫar? qāʿdah nḥāwil kul yawm niḫdim ʿalal- duktawrāh. yāwmiyyan nḥill *pay say*. nlawiǧǧ ʿalā thèse wayn. nḥilhā naġzurilhā win-habbiṭhā. bass niʾakkad ʾillī hiyyah mazālat mawǧūdah.

Example 23: Translation

Rawan: (1) I swear, these days are exhausting because we now have the **interview** for selecting the new **ambassador**. So, the whole week, I have **interviews** from **two-thirty** until **four-thirty-five** every day.

Soufia: (2) The whole week?

Rawan: (3) The whole week, and the week after that. The interviews were scheduled during Ramadan. *Otherwise*, what else am I doing? I am trying every day to work on my doctorate. Every day I turn on my *PC*, search for where my thesis is, open it, glance at it, and close it down. Just to make sure it is still there.

In this example, we see how Rawan uses CS as a means of accommodating Soufia's language choice and reflecting in-group membership. When Soufia asks her question in French, Rawan responds with French. This switch can be seen as a way for Rawan to demonstrate her

identification with Soufia. By seamlessly transitioning to French, Rawan reinforces belonging to the same group.

Metalinguistic interviews further support the observation that participants intentionally codeswitch to accommodate the language of the previous speaker. When asked about this behavior, participants gave responses such as, “She asked me in French, so I answered her in French,” “My friend talked to me in English, so I did the same,” and “She used English, and I did the same,” highlighting their conscious effort to align their language choice with that of the preceding speaker.

Another clue from the present study regarding CS as an identity marker is the frequent switch from MA to French or English when naming countries, cities, or using numbers. According to Sayahi (2007), in the North African context, CS between Arabic and French serves as a sociolinguistic marker, distinguishing educated from non-educated speakers. The participants in this study appear to affirm their identities as multilingual and educated individuals, having received instruction in French and English, through this type of CS.

Metalinguistic interviews further support this observation, with participants reporting, “At school I studied **maths** and **geography** in French,” “English and French were **the languages of instruction** and I started to use them for numbers and names of counties,” and “I usually use French and English with numbers **because of my education**,” when asked about this linguistic behaviour.

Another notable finding from the data that offers compelling insights into the role of CS as an identity marker is the participants’ frequent use of French or English word stems combined with Arabic prefixes or suffixes. This practice, which requires a high level of linguistic competence (Auer, 1998; Stavans & Muchnik, 2008), is a deliberate choice for participants to showcase their language skills. In the North African context, French and English are often associated with sophistication, education, and prestige (Daoud, 2001; Sayahi, 2007, 2011). By engaging in this advanced form of CS, the participants align themselves with these cultural ideals, allowing them to project an identity associated with the mastery of English and French

To illustrate, the following excerpt occurs within the broader context of a discussion on daily routine, where Dania describes her habitual activities.

Example 24:

Dania: (1) mbʿadā nšūf est-ce que ʿandī des projets niḫdimhom. ou bien **assignments**. ou bien ʿandī kaš mā (ā:h) **meeting**. wallā mbʿadāk mīn dāk nahbiṭ l-taḥtā fī **downstairs** lī-hāḏīk ʾil-**smoking area**. nibqā šwayyah nqaṣṣir. ḥadrah tjīb ḥadrah. win-**havī** šwayyah **fun**.

Amanda: (2) n-**havī**! ʿağbatnī (hahaha).

Example 24: Translation

Dania: (1) After that, I check if I have any projects to work on, or maybe **assignments**, or if I have a **meeting**. Otherwise, I go down to that **downstairs smoking area**. I stay a bit to have a talk. One conversation leads to another, and "n-**havī**" (we have) a bit of **fun**.

Amanda: (2) "N-**havī**"! I liked it.

In the example provided, the use of "*n*-hav*ī*" demonstrates a sophisticated form of CS where the Arabic prefix *n*- (we) and the suffix *-ī* (a marker that often implies an ongoing action) are added to the English verb "have." This form of CS requires an understanding of grammatical structures across languages, showcasing the participant's ability to mix elements from different languages and highlighting her linguistic skilfulness. Amanda's reaction, expressing that she "liked it," highlights her admiration for this blending, suggesting that such creativity is seen as impressive. Through this, Dania successfully achieved her goal of creating the image of a well-educated multilingual speaker.

Metalinguistic interviews reveal participants' deliberate use of this form of CS, with responses such as, "I like to play with words. I enjoy it," "It's a normal thing for us as multilinguals; it is easy and practical" and "This is very common among my friends; we all do it," when asked about this linguistic practice.

Another notable finding from the data that offers compelling insights into the role of CS as an identity marker is the participants' frequent use of French or English to form questions. This tendency to use English or French rather than MA for questions might reflect the association of these two languages with formal education in their context. By opting to ask questions in English or French, participants may be positioning themselves as well-educated individuals. This choice

could be a deliberate strategy to emphasize their multilingual identity, which they closely tie to their educational background and exposure to multiple languages.

To illustrate, the following excerpt is taken from a broader discussion on women's rights. Rose shares her anger and disappointment at how people from her home country have changed after moving to Europe, adopting new behaviours and lifestyles that no longer reflect their original culture.

Example 25:

Rose: (1)	ʾil-ʾinsān kī yīğī hnā. ṣaḥ tġarrū ʾiddinyā. bṣaḥ yitbadlū – nāss bizzāf ğāw mʿānā wit-badlū. willāw tiḥsibhum/ mū minnā. zādū hnā tḥayrī fīhum.
Yaser: (2)	tīwalyū <u>des européens</u> ʾakṯar min <u>les européens</u> (hahaha). hāḏī hī **contradiction**.
Rose: (3)	*may may* **why**? ʾanā hāḏī lī hākā ḥāb nisqasīhum. hāḏā suʾāl barkʿandī. suʾāl fī rāsi. **why**? yaʿnī/ wiš šāfū fīl-ḥayāh lihnā lī ḫallathum yḥibbū yʿīšū hāḏa-l ḥayāh wi mayʿīšūš ʾil-ḥayāh lī kānat. **what's the difference?/** …

Example 25: Translation

Rose: (1)	When a person comes here, they may be tempted by life and change. Many people who came with us have changed. They became as if they are no longer one of us. They stayed here, and I am puzzled by them.
Yaser: (2)	They have become more <u>European</u> than <u>the Europeans</u>. This is the **contradiction**.
Rose: (3)	*But But* **why**? This is what I want to ask them. It is just a question I have. A question in my mind. **Why**? I mean, what did they see in life here that made them want to live this life and not the one they had before? **What's the difference**?

In this example, Rose's switch from MA to English when asking the questions "Why?" and "What's the difference?" suggests a deliberate strategy to emphasize her educational background and multilingual identity.

Another prominent observation from the analyzed data is the high incidence of switched French discourse markers. Schiffrin (1987) defines discourse markers as "sequentially dependent elements that bracket units of talk" (p. 31). According to Schiffrin, discourse markers can be

understood as a set of linguistic expressions that include members from various word classes, such as conjunctions, interjections, adverbs, and lexicalized phrases.

It is important to note that some French discourse markers have already gained the status of borrowings in MA, such as *donc* ("so"), *en tout cas* ("anyway"), *déjà* ("already"), *juste* ("just"), *mais* ("but"), *d'ailleurs* ("by the way"), *en plus* ("moreover"), *quand même* ("even so"), *en général* ("in general"), *ça y est* ("it's done"), and *sinon* ("otherwise") (Mosteghanemi, 2020; Oueslati, 2021; Post, 2015; Sayahi, 2007). However, the data also reveal frequent use of switched French discourse markers that have not gained the status of borrowings, such as *par contre* ("on the other hand"), *normalement* ("normally"), *généralement* ("generally"), *exactement* ("exactly"), *justement* ("exactly"), *bien sûr* ("of course"), *par rapport* ("compared with"), *surtout* ("mainly"), *à part ça* ("other than that"), *personnellement* ("personally"), *par exemple* ("for example"), *même si* ("even if"), *voilà* ("exactly"), *puisque* ("because"). These represent the most common switched French discourse markers found in the data, to mention but a few.

According to Maschler and Schiffrin (2015), numerous studies on bilingual discourse show that bilinguals frequently switch languages when verbalizing discourse markers. This linguistic behavior can be attributed to various factors, such as highlighting contrast and enhancing the saliency of markers as contextualization cues (Maschler, 1997b), reducing cognitive load by avoiding the need to choose between languages when using markers (Matras, 2000), or marking identity (Maschler, 2000; Stell, 2015).

The analyzed data from the present study supports the use of switched French discourse markers primarily for marking identity. In line with Maschler's (2000) findings, the motivation of reducing cognitive load, as suggested by Matras (2000), does not seem applicable in the present study, as participants frequently use equivalent MA markers as well. Additionally, responses from the metalinguistic interviews reveal a consensus among participants that French discourse markers are considered an integral part of their Arabic variety and identity. Participants do not perceive switching from MA to French as actual CS.

Participants provided statements such as, "**I don't really codeswitch when using these words**," "**I usually use transition words in French—it's part of my identity as Tunisian and educated**," "It's just a habit; this is the way I speak," "I feel that they are **part of my identity**," "I use them **unconsciously**," and "I feel that some words are **fossilized in my mind**," when asked about their use of switched French discourse markers during recorded conversations.

One final point worth highlighting is that, based on the analyzed data, CS is not only a marker of identity, but the absence of CS in specific contexts can also serve as an identity marker. Participants in this study affirm their religious identity as Muslims by refraining from CS when using expressions that include the name of Allah or other religious references, consistently maintaining the use of MA. Phrases such as *subḥān-al lāh* ("glory be to Allah"), *mašāʾ-al lāh* ("what Allah willed"), *ʾallāhu ʾaʿlam* ("Allah knows best"), and *ʾuqsimu billāh* ("I swear by Allah") are exclusively used in MA. To add further details, the word Allah appears 77 times in the data, whereas English or French equivalents are never used. Similarly, the MA word *dīn* ("religion") appears 14 times, while its French equivalent *la religion* is used only twice by the same speaker, and never in English. This practice reflects the participants' perception that "Arabic is the mother tongue of Islam" (Moraru, 2019, p. 313). By exclusively using MA for religious expressions, participants in this study reinforce their Islamic identity.

Moreover, this linguistic practice emphasizes a balancing act between global integration and identity preservation. As Stavans and Swisher (2006) observe, "More and more societies and individuals need to become part of the 'global village' for technological, scientific and humanistic purposes, while maintaining an individual, ethnic, religious or national identity" (p. 193). By choosing to exclusively use MA for religious expressions, participants preserve their cultural and religious values amidst the pressures of globalization.

Metalinguistic interviews further support this observation, with participants reporting, "I always use Arabic to talk about religion," "Arabic is the language of the Qur'an, so I feel it is closer to the heart" and "I am proud of being a Muslim and **I don't feel comfortable** using Arabic with words related to religion," when asked about this linguistic behaviour.

4.1.4.2 CS for expressing individualistic values

Western societies are typically associated with individualistic cultures, characterized by values such as independence, self-reliance, personal autonomy, and the pursuit of personal goals (Steele & Lynch, 2013), as well as the freedom of self-expression (Triandis & Gelfand, 1998, as cited in Humphrey & Bliuc, 2021). Additionally, individualistic cultures place importance on happiness and economic opportunities, with personal fulfilment and success being central themes (Oyserman et al., 2002). In contrast, Eastern societies are often characterized by collectivist cultures that prioritize group identity, shared responsibilities, and fulfilling social obligations (Steele & Lynch,

2013). Accordingly, considering the assumption that language, culture, and thought are interconnected (Sharifian, 2011, 2017), observations from the analyzed data concerning participants' language use when expressing individualistic and collectivist cultural values become more understandable.

Findings from the analyzed data in the present study reveal that participants frequently switch from MA to French and English when discussing topics related to cultural values associated with individualistic culture, particularly those of the Western world, such as desires, enjoyment, and self-expression. For instance, the English word "want" appears 11 times in the dataset but never in MA; "enjoy" is used eight times, also without any use of its MA equivalent. Similarly, the English phrase "I think" appears 23 times, and its French equivalent *je pense* is used 25 times, but the MA equivalent *ʾaʿtaqid* is never used. Additionally, the French expression *je préfère* ("I prefer") is used six times, again without any use of its MA equivalent *ʾanā ʾufaḍḍil*. Furthermore, words related to the pursuit of personal goals, that is the French terms *chance* and *opportunité*, appear eight times each in the data, while the English word "opportunity" is used seven times. In contrast, the MA equivalent *furṣah* is used only three times.

In contrast, terms related to collectivist values, such as those referring to family, friendship, and social gatherings, are predominantly expressed in MA and rarely switched to French or English. This suggests that participants in the present study tend to use their native language to articulate concepts closely tied to cultural traditions and social relationships, reflecting their collectivist orientation. For example, the MA words *ṣāḥib*/ *ʾaṣḥāb* ("friend/friends") appear 28 times in the data, whereas the French and English equivalents are used only four times each. The MA word *ʿirs* ("wedding") is used 41 times, while the English equivalent appears only once, highlighting the preference for native terminology in discussing cultural events. Interestingly, the MA word *munāsabah* ("occasion") appears 19 times, compared to just once in French (*occasion*). In MA, *munāsabah* often carries deeper connotations of family gatherings, community celebrations, or religious events—concepts essential to the collectivist culture.

From a cultural point of view, these findings suggest that participants' language choices in the present study reflect a clear distinction between how they perceive and express individualistic versus collectivist cultural values. The switch to French and English when discussing desires, enjoyment, and self-expression indicates that these languages are seen as more suitable for conveying concepts related to individualism. This may be because French and English belong to

societies which are typically associated with individualistic cultures. Conversely, the predominance of MA with terms related to collectivist values, such as those referring to family, friendship, and social gatherings suggests that participants consider MA to be more fitting for expressing collectivist values, likely due to its association with their home countries, which have collectivist cultural orientations.

Metalinguistic interviews further support this observation, with participants providing insights into their language preferences. When asked about their choice of language for expressing different cultural values, participants reported statements such as, "**I feel more comfortable** using French and English to talk about **my wants**," and "For me, French and English are **more assertive** than Arabic for expressing my opinion." Others noted, "When I think about **enjoyment** and what I prefer, French and English words **come to my mind first**." In contrast, participants expressed a stronger connection to MA for collectivist values, stating, "I feel that Arabic is closer to the heart when I talk about my family and friends," and "**I don't think** the word 'wedding' gives the **intended meaning** compared to the Arabic '*ʿirs.*'" These responses indicate that participants perceive French and English as more suitable for discussing individualistic concepts, while MA remains their preferred language for expressing concepts associated with family, friends, and social occasions.

4.1.4.3 CS for expressing concepts with negative attitudes

According to Garrett (2010), a widely cited definition of an attitude was provided by Allport (1954): "a learned disposition to think, feel and behave toward a person (or object) in a particular way" (Allport, 1954, as cited in Garrett, 2010, p. 19). Obviously, this definition highlights that attitudes affect thought and behaviour. Building on Sharifian's (2011, 2017) cultural linguistic theory, which emphasizes the interconnectedness of language, culture, and thought, it can be inferred that attitudes toward specific concepts may influence language choice when expressing those concepts.

A general observation from the analyzed data is that participants tend to confine terms with negative attitudes to English or French, while terms with positive attitudes are primarily expressed in MA but are also occasionally switched. For instance, the English word "feminism" appears nine times in the dataset, and its French equivalent *féminisme* is used 25 times, yet the MA equivalent is never used. Similarly, "feminist" is mentioned six times in English and 15 times in French

(*féministe*), without any use of the MA equivalent nasawī/ nasawiyyah. In contrast, the word "equality" is used 15 times in MA (*musāwāh*), six times in English, and once in French (*égalité*). Similarly, the word "rights" appears 15 times in MA (*ḥuqūq*), three times in English, and twice in French (*droits*). The English word "equal" is used four times, while its MA equivalent *mutasāwiyīn* appears twice.

It is important to note that all participants, both male and female, expressed opposition to the concept of extreme feminism, as reflected in their discussions. Notably, they consistently used the terms "feminism" and "feminist" exclusively in English and French, despite being familiar with the MA equivalents, as confirmed during metalinguistic interviews. This pattern suggests that underlying attitudes toward these concepts may be influencing their language choices. Using English or French to express terms with negative attitudes, rather than MA, could signal a cultural stance where such concepts are kept at a distance, as they do not align with participants' cultural values.

Moreover, during metalinguistic interviews, participants attributed their linguistic choices to factors such as exposure to media and education. However, these explanations do not fully account for their predominant use of MA for terms with positive attitudes, such as "equality" and "rights." As Garrett (2010) notes, "One of the main difficulties in attitudes research is estimating how much reflexive awareness people actually have of their various attitudes" (p. 31). This suggests that participants may not be fully conscious of the underlying attitudes influencing their language choices.

Overall, the analysis of sociocultural functions shows how participants strategically use CS to reflect identity, cultural values, and attitudes. CS as an identity marker is evident in participants' accommodation of the preceding speaker's language, frequent switching for names of countries and numbers, and blending of Arabic prefixes or suffixes with English and French word stems, reflecting their multilingual identity and association with sophistication, education, and prestige. CS for expressing individualistic values highlights a preference for French and English when discussing desires, enjoyment, and self-expression, reflecting associations with individualistic cultures, while MA is predominantly used for collectivist values, such as family, friendship, and social gatherings, aligning with collectivist orientations. Finally, CS for expressing concepts with negative attitudes demonstrates a tendency to use English or French for such terms, reflecting attitudes that signal cultural distance from these concepts.

4.2 Percentage distribution of CS categories

This section addresses Research Question 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? As outlined in Section 4.1, the functions of CS identified in this research are categorized into four main groups: pragmatic, semantic, linguistic, and sociocultural. 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. Additionally, the percentage of each category was analyzed for each individual recording, allowing for a clearer understanding of how CS functions vary across recordings (see Table 4.14).

To further illustrate these findings, word clouds were created for each main topic discussed by the participants, with separate word clouds generated for French and English terms. These visual representations highlight the most frequently used words in French and English across the five topics, enabling a quick identification of prominent terms among the trilingual participants. Due to space limitations, exact word frequencies were not included in tabular form, making the word clouds an effective alternative for visualizing these key terms.

Table 4.14

Number and percentage distribution of the broader categories across recordings

Title	Pragmatic	% Pragmatic	Semantic	% Semantic	Linguistic	% Linguistic	Sociocultural	% Sociocultural
Recording 1	99	24.09%	110	26.76%	25	6.08%	177	43.07%
Recording 2	61	32.11%	48	25.26%	11	5.79%	70	36.84%
Recording 3	90	32.97%	57	20.88%	8	2.93%	118	43.22%
Recording 4	57	33.73%	45	26.63%	10	5.92%	57	33.73%
Recording 5	68	37.57%	34	18.78%	20	11.05%	59	32.60%
Recording 6	98	32.34%	82	27.06%	18	5.94%	105	34.65%

Recording 7	49	32.45%	34	22.52%	8	5.30%	60	39.74%
Recording 8	132	33.85%	125	32.05%	43	11.03%	90	23.08%
Total	654	29.96%	535	24.51%	158	7.24%	836	38.29%

Before discussing Table 4.14, it is important to note that the number of CS occurrences exceeds the number of CS functions identified in the data. This discrepancy arises because multiple instances of CS within the same conversational turn, provided that they serve the same function, are counted as a single occurrence under one broader category. This approach prevents over-counting and provides a more accurate representation of the functions.

For illustration, consider the following example from the data, where Maria explains a technical problem her friend experienced. Maria says:

Example 26:

ḥattā ʾanī mā fhimtiš ʿlāš hiyyah mā bġāš yiḫdimhā. dirnā **update** ʾil-bāriḥ. wi ʿāwadat installé kil šī mi-l lawwal. wi ṭilʿat ʾil-**latest version**.

Example 26: Translation

Even I do not understand why it is not working for her. We did the **update** yesterday, and she installed everything from the beginning and got the **latest version**.

In this example, there are three instances of CS: “update,” “*installé,”* and “latest version.” All three serve the function of CS for technology-related terminology, which falls under the broader category of semantic functions. Therefore, they are counted as a single instance within this category to avoid over-counting.

Table 4.14 provides a comprehensive breakdown of CS functions, categorized into pragmatic, semantic, linguistic, and sociocultural, across eight recordings. The table shows that, on average, sociocultural functions are the most prevalent, representing 38.29% of CS usage (ranging from 23.08% to 43.22%), followed by pragmatic functions at 29.96% (ranging from 24.09% to 37.57%). However, this average masks notable variability across recordings, where the

prominence of each category shifts significantly. For instance, in Recording 1, sociocultural functions account for 43.07%, significantly exceeding pragmatic functions at 24.09%. Similarly, in Recording 3, sociocultural functions (43.22%) far surpass pragmatic functions (32.97%). In contrast, Recording 8 highlights a reversal, with pragmatic functions (33.85%) exceeding sociocultural functions (23.08%). A similar pattern is observed in Recording 5, where pragmatic functions dominate at 37.57%, compared to sociocultural functions at 32.60%.

This variation highlights that while sociocultural and pragmatic functions dominate overall, their prominence fluctuates across individual recordings, with certain recordings emphasizing one category more than the other. Despite this variability, Table 4.14 indicates that participants in the present study predominantly use CS for sociocultural purposes, such as marking identity, expressing individualistic values, and conveying concepts with negative attitudes. Although less frequent on average, pragmatic purposes also play a significant role, encompassing functions, such as showing contrast, highlighting information, listing, signalling conclusions, emotionally distancing, qualifying messages, setting off side remarks, and referring to conventional terms.

Semantic functions, ranking third, constitute 24.51% of CS usage (ranging from 18.78% to 32.05%) and reflect participants' use of CS for business, technology, and power terminology, as well as for conceptual shifts in meaning, terms related to intellectuality, and critical evaluation. While semantic functions are generally less frequent compared to sociocultural and pragmatic functions, examining individual recordings reveals notable variability. For instance, in Recording 1, semantic functions (26.76%) exceed pragmatic functions (24.09%). Similarly, in Recording 8, semantic functions (32.05%) surpass sociocultural functions (23.08%). In contrast, Recording 5 demonstrates a distinct trend, where pragmatic functions (37.57%) far exceed semantic functions (18.78%). Notably, the percentage difference between these two categories in Recording 5 is the highest among all recordings, representing a significant gap compared to the others.

Linguistic functions account for only 7.24% of CS usage (ranging from 2.93% to 11.05%), suggesting that participants' CS behavior is less influenced by the need to address dysfluencies or achieve economy of expression across all recordings, and more driven by sociocultural, pragmatic, or semantic motivations.

Overall, examining the recordings individually reveals distinct patterns, particularly in sociocultural and pragmatic functions. Notably, the eight recordings are substantially different in

terms of the number of participants, session length, and topic coverage (see Tables 3.1 and 3.12). This contextual variability likely influences the distribution of CS functions across recordings, yet some general patterns emerge. These patterns indicate that CS among these trilingual speakers primarily serves sociocultural and pragmatic purposes, with less emphasis on semantic and linguistic functions. It is also worth noting that, to the best of my knowledge, no previous study has adopted a similar classification system or provided such detailed quantification of CS functions, as outlined in Section 1.2. Consequently, direct comparisons with findings from other studies have not been possible.

Visual representation of key terms

To supplement the quantitative analysis in Table 4.14, word clouds were generated for each of the five main topics discussed by participants, with separate clouds for French and English terms within each topic (see Appendix J). These word clouds provide a visual overview of the most frequently used terms in each language, enabling the identification of prominent words among the participants. As qualitative complements to the numerical data, the word clouds offer insights into the specific words and expressions participants use in French and English across topics. The following are the top 10 most commonly used content words from each word cloud:

- **Daily routine (French):** *bus*, *semaine*, *activités*, *cours*, *pied*, *grave*, *routine*, *abonnement*, *appel*, *choses*
- **Daily routine (English):** routine, daily, building, reels, shift, city, center, lectures, library, addicted

The French and English sets for daily routine reveal both shared and distinct focuses. While both sets include the word routine, the remaining word choices highlight different aspects of daily routine. On the whole, the French set focuses on mobility and transportation, with terms such as *bus* (“bus”), *pied* (“foot”), and *abonnement* (“subscription”). In contrast, the English set typically reflects institutional and digital contexts, featuring words such as “lectures,” “library,” “building,” “reels,” and “addicted.”

- **Travel (French):** *deux*, *expérience*, *Paris*, *jours*, *musées*, *bus*, *calme*, *escale*, *agence*, *centre*
- **Travel (English):** city, experience, flow, tax, travel, night, Europe, flight, budget, enjoy

The French and English sets for travel reveal both shared and distinct emphases. Both sets include the word experience. Emotional elements are also present in both sets, with *calme* (“calm”) in French and “enjoy” in English. Despite these commonalities, distinct focuses emerge in each set. In general, the French set emphasizes specific aspects of travel, such as notable locations (*Paris*, *musées*, *centre*) and considerations related to transportation (*bus*, *escale*). In contrast, the English set broadly focuses more on financial and logistical aspects, as seen in words such as “tax,” “budget,” and “flight.”

- **Technology and communication (French):** *technologie*, *application*, *communication*, *réseaux sociaux*, *avantages*, *compte*, *chances*, *contact*, *contrôler*, *cinq*
- **Technology and communication (English):** technology, social media, interested, need, content, maps, online, people, use, want

The French and English sets for technology and communication reveal both shared and distinct emphases. Both sets include the terms technology and social media. However, there are differences in the remaining terms in each set. Generally, the French set emphasizes the benefits and management of technology as seen in terms such as *avantages* (“advantages”), *chances* (“chances”) and *contrôler* (“control”). In contrast, the English set generally highlights how participants interact with technology as seen in terms such as “interested,” “need,” “want,” and “use.”

- **Cultural celebrations (French):** goût, l'ambiance, région, trois, famille, couple, quantité, impossible, l'époque, préférences
- **Cultural celebrations (English):** gathering, celebrations, different, food, make, market, event, scammer, Christmas, obligatory

The two sets of words for cultural celebrations in French and English are distinct, with no overlap in vocabulary. Generally, the French set highlights the sensory dimension of celebrations, with words such as *goût* (“taste”) and *l'ambiance* (“atmosphere”), as well as the relational aspect, with words like *famille* (“family”) and *couple* (“couple”). In contrast, the English set generally includes words focusing on bringing people together for a shared purpose, such as “gathering,” “celebrations,” and “event,” as well as words such as “food” and “market,” which point to tangible components of celebrations.

- **Women's rights (French):** *féminisme*, *féministe*, *nombre*, *rôle*, *cas*, *concept*, *point*, *définition*, *l'Europe*, *mentalité*
- **Women's rights (English):** feminism, independent, equal, feminist, society, prohibition, strong, woman, contradiction, equality

The French and English sets for women's rights reveal both shared and distinct focuses. The shared terms such as *féminisme* ("feminism") and *féministe* ("feminist"), reflect a common emphasis on the concept of feminism. However, the differences between the sets underline unique perspectives. Broadly, the French set highlights a theoretical and conceptual aspect, with words such as *concept* ("concept"), *définition* ("definition"), *point* ("point"), and *mentalité* ("mentality"). In contrast, the English set typically emphasizes personal values and attributes, with words such as "independent" and "strong," while also focusing on equality with terms such as "equality" and "equal."

CHAPTER 5

CONCLUSION

Overview

This chapter concludes the present study by summarizing its key findings, discussing their implications, acknowledging its limitations, and proposing directions for future research. It reflects on how the study advances the understanding of CS among MA-French-English trilingual speakers. Additionally, it highlights the study's contributions to the field of multilingual communication.

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. The Maghreb, a region encompassing Morocco, Algeria, and Tunisia, presents a unique sociolinguistic landscape shaped by complex historical, cultural, and linguistic influences. By bridging identified notable gaps in the literature, this study provides fresh insights into CS in a trilingual context.

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 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 ICR, thereby mitigating researcher bias.

Guided by two research 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? and (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? This study aims to bridge key gaps in CS research. Thus, it contributes significantly to the understanding of CS among trilingual speakers.

The research design is primarily anchored in qualitative approach. Although RQ2 requires quantitative analysis, it serves to complement qualitative findings, enhancing understanding of the roles CS plays in trilingual communication. To ensure data collected aligned with the study objectives, deciding on participants was guided by criteria established in CS literature.

The sampling began by leveraging personal networks and extended through snowball sampling. Online platforms, including Facebook groups for Maghreb Arabs in Hungary, were also used to broaden the pool. This combination of recruitment methods resulted in a diverse group of 29 participants representing various nationalities and academic institutions across Hungary.

To comprehensively address the research questions, data collection involved three tools: questionnaires, audio recordings, and metalinguistic interviews. In-person administration of the questionnaires helped establish rapport and encouraged complete responses. Following questionnaire data analysis, participants meeting the study's criteria were invited to participate in recording sessions, yielding 5.12 hours of naturalistic data. The participants in each group discussed familiar topics, guided by a moderator.

Metalinguistic interviews, used as the third tool, proved essential in countering initial challenges in identifying and categorizing CS functions, further supporting the study's findings. Nine participants from all eight groups engaged in these interviews, each reflecting on their CS use after listening to selected excerpts.

Data analysis began with the transcription of audio recordings. The manual transcription process followed established conventions, with clause units segmented to align with trilingual

analysis guidelines. Differentiating borrowed and codeswitched elements drew on recent research and borrowing lists. Content analysis was then applied to identify and categorize meaning units into pragmatic, semantic, linguistic, and sociocultural categories. Challenges in categorization were tackled using metalinguistic interviews, participant comparisons, and ICR.

Further theoretical exploration concluded that semantic and cultural-cognitive approaches best explain the observed CS functions. Consequently, the study adopted the usage-based approach (Diessel, 2017) and frame semantics (Fillmore, 2006) from Cognitive Linguistics and analytical tools provided by CL (Sharifian, 2017).

Quantitative analysis supported different stages of the study, beginning with screening participants via questionnaires and providing descriptive insights into their language backgrounds and attitudes toward CS. Finally, quantitative analysis answered RQ2, determining the percentage distribution of each CS function category and highlighting the roles of CS within participant discourse.

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.

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, intellectual terms, 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.

5.2 Implications of the study

This study offers significant theoretical, methodological, and practical implications for advancing the understanding of CS among trilingual speakers. Theoretically and methodologically, it emphasizes the need for a multidimensional approach to CS in trilingual contexts. While traditional perspectives—structural, psycholinguistic, and sociolinguistic—have each provided important insights into bilingual and multilingual language use, the findings of this study do not align exclusively with any one of them. Instead, the use of analytical tools from Cognitive

Linguistics (the usage-based approach and frame semantics) and CL was essential for unpacking and interpreting the diverse functions of CS observed in the data. The emergent functional categories—pragmatic, semantic, linguistic, and sociocultural—demonstrate that CS operates across cognitive and cultural dimensions. Therefore, the study supports the need for an interdisciplinary theoretical approach that integrates structural, psycholinguistic, sociolinguistic, cognitive, and cultural perspectives to fully capture the layered and dynamic nature of CS in trilingual discourse.

Additionally, the study demonstrates the methodological value of incorporating metalinguistic interviews. By allowing participants to reflect on their language use, this method offered deeper insights into participants' CS behaviour and also helped mitigate interpretive subjectivity. As such, it presents a replicable and valuable model for future research on CS.

From a practical perspective, the findings have potential implications for various multilingual professional domains, particularly in business and diplomatic contexts. Understanding that CS serves deliberate communicative functions, rather than merely filling lexical gaps, can promote more inclusive and effective interaction in linguistically diverse environments. For example, pragmatic functions—such as using CS to show contrast, highlight important information, or signal conclusion—may be especially beneficial in formal presentations, negotiations, or strategic discussions where clarity and precision are essential. Similarly, semantic functions, including CS for domain-specific terminology in fields such as business or technology, can support mutual understanding by drawing on shared cultural and professional frames of reference.

In diplomatic contexts, the sociocultural functions of CS are particularly relevant. Switching languages to mark identity can foster trust, demonstrate respect, or assert affiliation. For instance, participants' tendency to use French or English when expressing individualistic values or discussing concepts with negative attitudes may reflect broader strategies used by multilingual professionals to navigate politically or culturally delicate interactions. In addition, linguistic functions—such as coping with dysfluencies or opting for more concise expressions—can be especially relevant in high-pressure, time-sensitive professional scenarios where fluency, efficiency, and clarity are paramount.

Overall, this dissertation offers a valuable model for future research on CS, contributing to a deeper understanding of how trilingual speakers manage discourse, negotiate meaning, and construct identity through their language choices.

5.3 Limitations of the study

The primary limitations of this study relate to the extent to which its findings can be generalized to other trilingual populations. Several factors— ranging from participant demographics to contextual influences, and potential data collection bias—may have influenced the observed CS behaviours and limit the broader applicability of the results.

A key limitation is that this thesis is regionally specific to NA, which may limit the generalizability of the findings to other trilingual settings, such as those in Europe, the Middle East, or Sub-Saharan Africa. While this thesis provides valuable insights into CS among MA-French-English speakers, differences in cultural, historical, social, and linguistic contexts across other trilingual communities may lead to distinct functions and frequency of CS. Additionally, different language policies and attitudes toward CS may shape CS practices differently in other multilingual communities, further influencing why speakers alternate between languages.

Relatedly, the Hungarian sociolinguistic context may have shaped participants' language practices in ways that diverge from those in their home countries. Participants reported greater exposure to and reliance on English, particularly in academic and professional settings. In contrast, French typically holds a more dominant role in the Maghreb. This disparity in language environment may have influenced the CS patterns observed.

Finally, the study also faces limitations related to participant bias, which may have subtly affected the nature or frequency of CS. Although several methodological strategies were employed to minimize this risk—including the use of familiar discussion topics, comparative analysis across participants, and data collection by an assistant familiar to the participants—such bias cannot be entirely ruled out.

In conclusion, this study offers a useful framework for analyzing CS in multilingual contexts; however, its findings may have limited generalizability to the broader trilingual population due to contextual and demographic constraints.

5.4 Further research

This study opens several promising avenues for further research into CS among trilingual speakers. Building on the findings of this study, future studies can offer a more comprehensive view of CS in trilingual contexts by exploring the following directions:

First, as explained in Section 5.3, this thesis is regionally specific to NA, which may limit the generalizability of the findings to other trilingual settings, such as those in Europe, the Middle East, or Sub-Saharan Africa. Therefore, future research should explore other multilingual contexts beyond NA to determine the extent to which the CS functions identified here are consistent or variable across regions.

Second, as explained in Section 5.3, this study's findings were shaped within a Hungarian context, where participants reported greater exposure to and reliance on English, particularly in academic and professional settings. Consequently, examining CS practices among MA-French-English speakers residing in their home countries, where French is more prominent, would help assess the consistency of the identified CS functions.

Thirdly, while this thesis adopted semantic and cultural-cognitive approaches—which proved particularly effective in unpacking the diverse functions of CS observed in the data—future research could re-examine the same dataset through alternative theoretical lenses that may uncover additional insights. For example, from a psycholinguistic perspective, Matras (2000) suggests that CS may reduce the cognitive load associated with language monitoring and production, thereby bypassing complex decision-making processes. Exploring this dimension could offer a deeper understanding of the cognitive mechanisms involved in multilingual language use. Additionally, structural approaches, which focus on the morphosyntactic constraints governing CS, may reveal new insights not readily captured by meaning-oriented analyses.

To conclude, given the wide range of theoretical frameworks applicable to the study of CS—and the potential of each to yield distinct insights—this dissertation recommends that future research adopt integrated, multidisciplinary approaches. By doing so, researchers can achieve a more comprehensive and nuanced understanding of this complex, dynamic, and multilayered phenomenon.

Finally, regarding language trends in the Maghreb, this study anticipates that Arabic will remain dominant, supported by its official status and deep ties to Islam and national identity. The roles of French and English, however, are likely to shift as political and educational policies

evolve. English is expected to become increasingly prominent, particularly in education and global communication, as it is widely viewed as a global lingua franca untainted by the Maghreb's colonial history. Policy changes—such as adopting English as the medium of instruction in scientific fields—may accelerate this trend. In contrast, French may gradually lose influence among younger generations. These projected developments highlight the need for further research into the region's evolving multilingual repertoire.

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Appendix A

Permission letter for the recordings

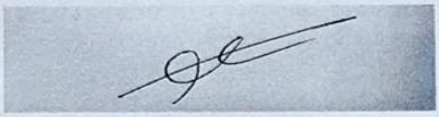
The following appendices must be enclosed to the application:

1. the call used for recruitment

2. the text of informed consent description of the research

3. the questionnaire, possibly in the form as it will be seen by the subjects of the research

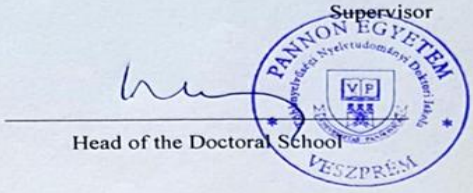
Veszprém, **21/02/2023**



Principal investigator

Ulrike Jessner-Schmid

Supervisor



Head of the Doctoral School

The Research Ethics Committee has examined the research plan and its review:

The Ethics Committee approves the request and permits to realize the research.

Veszprém, 04/05/2023 ..... date

Chair of the Committee

Appendix B

الملف الشخصي لمتعددي اللغة: اللغة العربية-اللغة الفرنسية-اللغة الإنجليزية

اسمي أحمد حجازي عواودة، وأنا طالب دكتوراة في مدرسة اللغات المتعددة ضمن كلية العلوم الإنسانية في جامعة بانونيا. أنا متحمس لتوجيه دعوة لك للمشاركة في دراسة بحثية تعتبر جزءًا أساسيًا من مشروعي للدكتوراة. أنا حاليًا أبحث عن مشاركة ثلاثين طالبًا دوليًا من دول المغرب العربي الناطقين بالعربية والفرنسية والإنجليزية والمقيمين في المجر. إذا قررت المشاركة، سيُطلب منك المشاركة في محادثة جماعية سيتم تسجيلها صوتيًا. سيتم تحليل البيانات المجمعة بعناية تامة لأطروحة الدكتوراة الخاصة بي. أود أن أؤكد لك أن جميع المعلومات الشخصية ستُحفظ بشكل مجهول، مع استخدام أسماء مستعارة طوال عملية البحث. مشاركتك تعتمد بالكامل على إرادتك، ويُمكنك سحب مشاركتك في أي وقت دون تقديم سبب أو التسبب بأي ضرر لنفسك. هذا ليس اختبارًا، لذا لا توجد إجابات صحيحة أو خاطئة. يرجى الإجابة على كل سؤال وتقديم إجاباتك بامانة ، حيث أن هذا فقط سيضمن نجاح البحث.

مقطع 1: المعلومات الشخصية

في هذا المقطع أرغب بأن تجيبوا على بعض الأسئلة الشخصية.

1. العمر: .....
2. الجنس: .....
3. مكان الولادة: .....
4. الجنسية: .....
5. جنسية الأب: .....
6. جنسية الأم: .....
7. مكان الاقامة الحالي/ مدينة: .....
8. مستوى الدراسة الأكاديمية الحالي: .....
9. التخصص: .....

مقطع 2: التاريخ اللغوي

في هذا المقطع أرغب بأن تجيبوا على بعض الأسئلة ذات الإجابات المباشرة عن تاريخكم اللغوي من خلال وضع إشارة في المربع المناسب.

10. في أي عمر بدأتم بتعلم اللغات التالية؟

	منذ الولادة	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20
العربية																					
الفرنسية																					
الإنجليزية																					

11. في أي عمر بدأتم تشعرون بالراحة في استخدام اللغات التالية؟

	أول ما يمكنني تذكره	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20	ليس بعد
العربية																						
الفرنسية																						
الإنجليزية																						

12. كم سنة قضيتم في الدراسة اللغوية للغات التالية (من المرحلة الإبتدائية إلى المرحلة الجامعية)؟

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20
العربية																					
الفرنسية																					
الإنجليزية																					

13. كم سنة قضيتم في بلد\منطقة يُنطق فيها باللغات التالية؟

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20
العربية																					
الفرنسية																					
الإنجليزية																					

14. كم سنة قضيتم مع عائلة تتكلم اللغات التالية؟

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20
العربية																					
الفرنسية																					
الإنجليزية																					

15. كم سنة قضيتم في بيئة عمل يُنطق فيها باللغات التالية؟

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	+20
العربية																					
الفرنسية																					
الإنجليزية																					

مقطع 3: المستوى اللغوي

في هذا المقطع أرغب بأن تقيّموا مستواكم اللغوي من خلال إعطاء درجات من 0 إلى 6.

	ليس جيداً على الإطلاق						جيداً جداً
16. أ. ماهو مستوى الكلام باللغة العربية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ب. ماهو مستوى الكلام باللغة الفرنسية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ج. ماهو مستوى الكلام باللغة الإنجليزية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
17. أ. ماهو مستوى الفهم باللغة العربية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ب. ماهو مستوى الفهم باللغة الفرنسية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ج. ماهو مستوى الفهم باللغة الإنجليزية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
18. أ. ماهو مستوى القراءة باللغة العربية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ب. ماهو مستوى القراءة باللغة الفرنسية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ج. ماهو مستوى القراءة باللغة الإنجليزية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
19. أ. ماهو مستوى الكتابة باللغة العربية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ب. ماهو مستوى الكتابة باللغة الفرنسية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
ج. ماهو مستوى الكتابة باللغة الإنجليزية لديكم؟	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

مقطع 4: استخدام تبديل اللغة

في هذا المقطع أرغب بأن تجيبوا على بعض الأسئلة عن استخدامكم لتبديل اللغة. الرجاء وضع دائرة حول الإجابة.

20. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة مع الأصدقاء؟ خذوا بعين الإعتبار جميع أصدقائكم، سواء كانوا ثنائيي أو متعددي اللغة أم لا.

لا تبديل على الإطلاق						شائع جداً
0	1	2	3	4	5	6

21. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة مع العائلة؟

لا تبديل على الإطلاق						شائع جداً
0	1	2	3	4	5	6

22. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة في المدرسة/ العمل؟

لا تبديل على الإطلاق						شائع جداً
0	1	2	3	4	5	6

23. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة في مجتمعكم (على سبيل المثال: السوبر ماركت, المجمع التجاري, الكنيسة, المسجد, مركز المجتمع)؟

لا تبديل على الإطلاق شائع جداً

6	5	4	3	2	1	0

24. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة عندما تتكلمون مع أنفسكم؟

لا تبديل على الإطلاق شائع جداً

6	5	4	3	2	1	0

25. كم هو شائع بالنسبة لكم أن تقوموا بتبديل اللغة عندما تعدّون؟

لا تبديل على الإطلاق شائع جداً

6	5	4	3	2	1	0

مقطع 5: المواقف تجاه تبديل اللغة

في هذا المقطع أرغب بأن تجيبوا على جمل تتعلق بمواقفكم تجاه تبديل اللغة. الرجاء وضع دائرة حول الإجابة.

26. أشعر بأنني أعبر عن نفسي عند التبديل بين اللغات

لا أوافق أوافق

6	5	4	3	2	1	0

27. أشعر بأنني أنتمي الى مجتمع/ثقافة تقوم بالتبديل بين اللغات

لا أوافق أوافق

6	5	4	3	2	1	0

28. من المهم بالنسبة لي أن أقوم بالتبديل بين اللغات بشكل طبيعي

لا أوافق أوافق

6	5	4	3	2	1	0

29. أريد أن يظن الآخرون أنني أقوم بالتبديل بين اللغات بشكل طبيعي

لا أوافق أوافق

6	5	4	3	2	1	0

توقيع المشارك:_____ التاريخ:_____

Appendix C

Profil Linguistique Multilingue: Arabe-Français-Anglais

Mon nom est Ahmad Hijazi Awawdeh et je suis doctorant à l'École Doctorale de Multilinguisme au sein de la Faculté des Lettres de l'Université de Pannonie. Je suis ravi de vous inviter à participer à une étude de recherche qui fait partie intégrante de mon projet doctoral. Je cherche actuellement la participation de trente étudiants internationaux maghrébins arabophones, francophones et anglophones résidant en Hongrie. Si vous décidez de participer, vous serez invité(e) à participer à une conversation de groupe qui sera enregistrée. Les données collectées seront minutieusement analysées pour ma thèse de doctorat. Je tiens à vous assurer que toutes les informations personnelles resteront anonymes et que des pseudonymes seront utilisés tout au long du processus de recherche. Votre participation est entièrement volontaire et vous êtes libre de vous retirer de l'étude à tout moment sans fournir de raison et sans préjudice pour vous-même. Il ne s'agit pas d'un test, il n'y a donc ni bonnes ni mauvaises réponses. Veuillez répondre à chaque question et donner vos réponses sincèrement, car cela garantira le succès de l'enquête.

Section 1. Informations biographiques

Dans cette section, je vous invite à fournir quelques informations personnelles.

1. Âge: ……..……

2. Sexe: ……..……...……

3. Lieu de naissance: ……..…….…….……

4. Nationalité(s): ……...…….……...……

5. Nationalité(s) du père: …….…...……

6. Nationalité(s) de la mère: ……...……...……

7. Ville de résidence actuelle: ……...…….……...

8. Niveau d'études actuel: ……...……..……

9. Majeure: ……...…….……

Section 2. Histoire linguistique

Dans cette section, je vous invite à répondre à quelques questions factuelles sur votre histoire linguistique en cochant la case appropriée.

10. À quel âge avez-vous commencé à apprendre les langues suivantes?

	Depuis la naissance	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabe																					
Français																					
Anglais																					

11. À quel âge avez-vous commencé à vous sentir à l'aise avec les langues suivantes?

	Aussi tôt que je me souvienne	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Pas encore
Arabe																						
Français																						
Anglais																						

12. Combien d'années de cours (grammaire, histoire, mathématiques, etc.) avez-vous suivis dans les langues suivantes (de l'école primaire à l'université)?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabe																					
Français																					
Anglais																					

13. Combien d'années avez-vous passées dans un pays ou une région où les langues suivantes sont parlées?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabe																					
Français																					
Anglais																					

14. Combien d'années avez-vous passées dans une famille où les langues suivantes sont parlées?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabe																					
Français																					
Anglais																					

15. Combien d'années avez-vous passées dans un environnement de travail où les langues suivantes sont parlées?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabe																					
Français																					
Anglais																					

Section 3. Compétence linguistique

Dans cette section, je vous invite à évaluer vos compétences linguistiques en attribuant des notes de 0 à 6.

	pas du tout bien						très bien
16. a. À quel point parlez-vous bien l'arabe?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. À quel point parlez-vous bien le français?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. À quel point parlez-vous bien l'anglais?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
17. a. À quel point comprenez-vous bien l'arabe?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. À quel point comprenez-vous bien le français?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. À quel point comprenez-vous bien l'anglais?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
18. a. À quel point lisez-vous bien l'arabe?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. À quel point lisez-vous bien le français?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. À quel point lisez-vous bien l'anglais?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
19. a. À quel point écrivez-vous bien l'arabe?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. À quel point écrivez-vous bien le français?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. À quel point écrivez-vous bien l'anglais?	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

Section 4. Utilisation de l'alternance linguistique

Dans cette section, je vous invite à répondre à quelques questions concernant votre utilisation de l'alternance linguistique. Veuillez entourer votre réponse.

20. À quel point est-il courant pour vous de changer de langue avec vos amis? Considérez tous vos amis, qu'ils soient bilingues, multilingues ou non.

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

21. À quel point est-il courant pour vous de changer de langue avec votre famille?

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

22. À quel point est-il courant pour vous de changer de langue à l'école ou au travail?

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

23. À quel point est-il courant pour vous de changer de langue dans votre communauté (par exemple : épicerie, centre commercial, église, centre communautaire)?

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

24. À quel point est-il courant pour vous de changer de langue lorsque vous vous parlez à vous-même?

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

25. À quel point est-il courant pour vous de changer de langue lorsque vous comptez?

Jamais de changement de langue Très courant

0	1	2	3	4	5	6

Section 5. Attitudes envers l'alternance linguistique

Dans cette section, je vous invite à répondre à quelques affirmations concernant vos attitudes envers l'alternance linguistique. Veuillez entourer votre réponse.

26. Je me sens moi-même lorsque je change de langue.

Pas d'accord D'accord

0	1	2	3	4	5	6

27. Je m’identifie à une communauté/culture qui change de langue.

Pas d'accord						D'accord
0	1	2	3	4	5	6

28. Il est important pour moi de changer de langue de manière naturelle.

Pas d'accord						D'accord
0	1	2	3	4	5	6

29. Je veux que les autres pensent que je change de langue de manière naturelle.

Pas d'accord						D'accord
0	1	2	3	4	5	6

Signature du participant: _____ Date: _____

Appendix D

Multilingual Language Profile: Arabic-French-English

My name is Ahmad Hijazi Awawdeh, and I am a PhD student at the Multilingualism Doctoral School within the Faculty of Humanities at the University of Pannonia. I am excited to extend an invitation to you to take part in a research study integral to my doctoral project. I am currently seeking the participation of thirty MA-French-English international students residing in Hungary. If you decide to participate, you will be asked to engage in a group conversation, which will be audio recorded. The data collected will be thoroughly analyzed for my PhD thesis. I would like to assure you that all personal information will be kept anonymous, with pseudonyms used throughout the research process. Your participation is entirely voluntary, and you are free to withdraw from the study at any time without providing a reason or without any detriment to yourself. This is not a test, so there are no right or wrong answers. Please answer every question and give your answers sincerely, as only this will guarantee the success of the investigation.

Section 1. Biographical information

In this section, I would like you to provide some personal information.

1. Age: ……...……

2. Sex: ……..……..……

3. Place of birth: …….……...……

4. Nationality(s): …….……..……

5. Father's nationality(s): …….…..……

6. Mother's nationality(s): ……

7. Current city of residence: ……...……...

8. Current level of education: ……...…..……

9. Major: ……

Section 2. Language history

In this section, I would like you to answer some factual questions about your language history by placing a check in the appropriate box.

10. At what age did you start learning the following languages?

	Since birth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabic																					
French																					
English																					

11. At what age did you start to feel comfortable using the following languages?

	As early as I can remember	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Not yet
Arabic																						
French																						
English																						

12. How many years of classes (grammar, history, math, etc.) have you had in the following languages (primary school through university)?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabic																					
French																					
English																					

13. How many years have you spent in a country/region where the following languages are spoken?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabic																					
French																					
English																					

14. How many years have you spent in a family where the following languages are spoken?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabic																					
French																					
English																					

15. How many years have you spent in a work environment where the following languages are spoken?

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
Arabic																					
French																					
English																					

Section 3. Language proficiency

In this section, I would like you to rate your language proficiency by giving marks from 0 to 6.

not well at all very well

16. a. How well do you speak Arabic? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

b. How well do you speak French? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

c. How well do you speak English? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

17. a. How well do you understand Arabic? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

b. How well do you understand French? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

c. How well do you understand English? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

18. a. How well do you read Arabic? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

b. How well do you read French? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

c. How well do you read English? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

19. a. How well do you write Arabic? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

b. How well do you write French? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

c. How well do you write English? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Section 4. Use of language switching

In this section, I would like you to answer some questions about your use of language switching. Please circle your response.

20. How common is it for you to switch languages with friends? Consider all your friends, bi-multilingual or not

Never switch Very common

0	1	2	3	4	5	6

21. How common is it for you to switch languages with family?

Never switch Very common

0	1	2	3	4	5	6

22. How common is it for you to switch languages at school or work?

Never switch Very common

0	1	2	3	4	5	6

23. How common is it for you to switch languages in your community (for example: grocery store, mall, church, community center)?

Never switch Very common

0	1	2	3	4	5	6

24. How common is it for you to switch languages when talking to yourself?

Never switch Very common

0	1	2	3	4	5	6

25. How common is it for you to switch languages when counting?

Never switch Very common

0	1	2	3	4	5	6

Section 5. Attitudes towards language switching

In this section, I would like you to respond to some statements about your attitudes towards language switching. Please circle your response.

26. I feel like myself when I switch languages.

Disagree Agree

0	1	2	3	4	5	6

27. I identify with a community/culture that switches languages.

Disagree Agree

0	1	2	3	4	5	6

28. It is important to me to switch languages in a natural way.

Disagree Agree

0	1	2	3	4	5	6

29. I want others to think that I switch languages in a natural way.

Disagree Agree

0	1	2	3	4	5	6

Participant's signature: _____ Date: _____

Appendix E

Consent form

Researcher: Ahmad Hijazi Awawdeh. I am a PhD student at the Multilingualism Doctoral School within the Faculty of Humanities at the University of Pannonia.

If you agree to participate in the research study conducted by the researcher listed above, please put a tick next to each point and sign at the bottom.

I confirm that I understand the purpose of this study, which is exploring the speech of trilinguals	
I understand that I will not receive monetary payment for my participation	
I understand that there are no anticipated risks from participation in this study	
I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason	
I understand that this study will include one meeting, ranging between 30 and 60 minutes	
I understand that during meeting the conversation will be audio-recorded	
I understand that there might be an interview of about one hour in which I am supposed to answer some questions about my recorded speech	
I understand that during the interview the researcher will take hand-written notes	
I understand that my confidentiality will always be maintained	
I acknowledge that my contributions to this study may be disseminated to other researchers for academic purposes, with the assurance that my confidentiality will be strictly upheld	
I understand that I can request a brief overview of the findings	
I understand that if I choose to withdraw, my data will be deleted immediately	
I acknowledge that my contributions to this study may be accessed by designated recruits appointed by the researcher, with the assurance that my confidentiality will be strictly upheld	
I understand that I will be offered a copy of this consent form	

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

Should you change your mind and wish to withdraw from the study, you can contact the researcher. Email: ahmadjazz2018@gmail.com

Appendix F

Note on transliteration

The researcher uses the standard system for transliterating MA into the Latin script, known as the International Phonetic Alphabet (IPA) for Arabic (Watson, 2002). Gemination is represented by doubling the consonant. Transliteration is based on pronunciation.

Arabic letter	IPA	Arabic letter	IPA
ب	/b/ /p/	ط	/ṭ/
ت	/t/	ظ	/ẓ/
ث	/t̲/	ع	/ʿ/
ج	/ǧ/ /ʒ/	غ	/ġ/
ح	/ḥ/	ف	/f/ /v/
خ	/ẖ/	ق	/q/ /g/
د	/d/	ك	/k/
ذ	/d̲/	ل	/l/
ر	/r/	م	/m/
ز	/z/	ن	/n/
س	/s/	ه	/h/
ش	/š/	و	/w/
ص	/ṣ/	ي	/y/
ض	/ḍ/	ء	/ʾ/

Monophthongs	Description	IPA	Diphthongs	IPA
◌َ	Short open vowel	/a/	أي	/ay/
◌ُ	Short closed vowel	/u/	أو	/aw/
◌ِ	Short closed vowel	/i/		
ا/ى	Long open vowel	/ā/		
ـُو	Long closed vowel	/ū/		
ـِي	Long closed vowel	/ī/		

Appendix G

Descriptive statistics of sum and coefficient means for language history, proficiency, use of language switching, and attitudes toward language switching

	Arabic M (SD)	French M (SD)	English M (SD)
Language history sum	93.90 (4.29)	53.57 (6.30)	26.20 (6.74)
Language history coefficient	19.56 (0.89)	11.16 (1.31)	5.46 (1.40)
Language proficiency sum	23.33 (1.37)	20.80 (2.14)	21.37 (2.33)
Language proficiency coefficient	24.31 (1.43)	21.67 (2.23)	22.26 (2.42)
Use of language switching	26.90 (2.25)	26.90 (2.25)	26.90 (2.25)
Use of language switching coefficient	18.68 (1.56)	18.68 (1.56)	18.68 (1.56)
Attitudes towards language switching sum	18.67 (2.20)	18.67 (2.20)	18.67 (2.20)
Attitudes towards language switching coefficient	19.45 (2.29)	19.45 (2.29)	19.45 (2.29)

Participant	Language history sum mean	Language history coefficient mean	Language proficiency sum mean	Language proficiency coefficient mean	Use of language switching mean	Use of language switching coefficient mean	Attitudes towards language switching sum mean	Attitudes towards language switching coefficient mean
1	51.33	10.69	21.67	22.57	26.00	18.05	18.00	18.75
2	56.33	11.73	23.33	24.31	28.00	19.44	17.00	17.71
3	63.00	13.12	22.33	23.26	26.00	18.05	18.00	18.75
4	55.67	11.60	21.33	22.22	29.00	20.14	22.00	22.92
5	55.67	11.60	21.33	22.22	29.00	20.14	22.00	22.92
6	60.67	12.64	20.67	21.53	27.00	18.75	19.00	19.79
7	60.00	12.50	21.00	21.88	24.00	16.67	19.00	19.79
8	59.00	12.29	21.00	21.88	25.00	17.36	17.00	17.71
9	57.33	11.94	20.33	21.18	24.00	16.67	17.00	17.71
10	53.33	11.11	22.33	23.26	28.00	19.44	21.00	21.88
11	56.33	11.73	20.00	20.83	24.00	16.67	16.00	16.67
12	54.33	11.32	21.67	22.57	24.00	16.67	18.00	18.75
13	61.00	12.71	22.00	22.92	24.00	16.67	19.00	19.79
14	57.00	11.87	21.00	21.88	29.00	20.14	19.00	19.79
15	53.67	11.18	19.67	20.49	27.00	18.75	19.00	19.79
16	50.67	10.55	19.67	20.49	29.00	20.14	18.00	18.75
17	49.33	10.28	18.67	19.45	24.00	16.67	15.00	15.63
18	54.67	11.39	21.00	21.88	28.00	19.44	21.00	21.88
19	58.67	12.22	23.67	24.65	30.00	20.83	18.00	18.75
20	57.00	11.87	22.00	22.92	27.00	18.75	19.00	19.79
21	62.00	12.91	23.33	24.31	30.00	20.83	23.00	23.96
22	60.00	12.50	24.00	25.00	30.00	20.83	23.00	23.96
23	60.67	12.64	23.00	23.96	28.00	19.44	16.00	16.67

24	63.00	13.12	23.00	23.96	25.00	17.36	16.00	16.67
25	58.67	12.22	23.00	23.96	29.00	20.14	17.00	17.71
26	64.33	13.40	22.00	22.92	30.00	20.83	20.00	20.83
27	69.33	14.44	24.00	25.00	24.00	16.67	17.00	17.71
28	56.67	11.80	23.33	24.31	24.00	16.67	17.00	17.71
29	56.33	11.73	22.00	22.92	26.00	18.05	17.00	17.71
30	60.67	12.64	22.67	23.61	29.00	20.14	22.00	22.92

Appendix H

Loanwords in MA found in the data

Loanword	Origin	IPA transcription (MA)	English translation
جاتو	French	/ǧātū/	Cake
رستورا	French	/rustūrā/	Restaurant
كرواسا	French	/kurwāsā/	Croissant
فريجيدير	French	/friǧīdayr/	Fridge
سباغيتي	Italian	/sbāġītī/	Spaghetti
تيرموس	French	/tirmus/	Thermos
لينيت	French	/linayt/	Glasses
روج	French	/rūǧ/	Red
أومليت	French	/ʾūmlayt/	Omelette
طون	French	/ṭun/	Tuna
كوستوم	French	/kustūm/	Suit
جينز	English	/ǧīnz/	Jeans
علّوش	Berber	/ʿallūš/	Lamb
بقلاوة	Turkish	/baqlāwah/	Baklava
كسكس/كسكسي	Berber	/kuskusī/ /kuskus/	Couscous
كوجينا	Italian	/kūǧīnā/	Kitchen
بيغو/بيرو	French	/bīrū/ /bīġū/	Office
لبلابي	Turkish	/lablābī/	Traditional dish made of chick peas soup
زقوقو	Berber	/zgūgū/	Aleppo pine seeds
شرمولة	Spanish	/šarmūlah/	Traditional Sfaxian dish
بلوزة	Italian	/blūzāh/	Traditional blouse
قفطان	Turkish	/qufṭān/	Caftan
برقوق	Berber	/barqūq/	Traditional Maghrebi dish
بريك	Turkish	/brīk/	Turkish pastry
شوربة	Turkish	/šūrbah/	Soup
أنجليه	French	/ʾunglayh/	English
كونيكسيو	French	/kūniksyaw/	Internet connection

فاك	French	/fāk/	Faculty
ليسنس	French	/līsuns/	Bachelor’s degree
ماستر	French	/māstar/	Master’s degree
مساج	French	/masāğ/	Message
بيه سيه	French	/pay say/	Computer
شوفير	French	/šūfayr/	Driver
ميتغو/ميترو	French	/mitrū/ /mitġū/	urban rail
تكسي	French	/taksī/	Taxi
ترا/تخا	French	/trā/ /tẖā/	Train
لا قاغ	French	/lā gāġ/	The station
تيليشاغجيه	French	/tīlīšāġğayh/	To download
فيزا	French	/vīzā/	Visa
فيستا	French	/fīstā/	Jacket
فاكونس	French	/vakawns/	holidays
فوياج	French	/vuyāğ/	Trip
راسيست	French	/rāsīst/	Racist
ديجا	French	/dayğā/	Already
دونك	French	/dawnk/	Thus
سينو	French	/sīnaw/	If not
جوست	French	/ğūst/	Just
مي	French	/may/	But
دا يوغ	French	/da yawġ/	By the way
سا يي	French	/sā yay/	That’s it
أ بلوس	French	/ʾu plūs/	Moreover
كو ميم	French	/ku maym/	Even so
أ تو كا	French	/ʾu tū kā/	Anyway
أوروبّا	French	/ʾawrawbbah/	Europe
أ جينيرال	French	/ʾu ğīnīrāl/	In general
تليفون	French	/taylīfawn/	Telephone
أوتيل	French	/ʾūtayl/	Hotel

نورمال	French	/nūrmāl/	Normal
سبيسيال	French	/spīsyāl/	Special
متر	French	/mitr/	Metre
ستاج	French	/stāğ/	Training
تواليت	French	/twālayt/	Toilette
بلاصة	French	/blāṣah/	Place
بلاكة	French	/blākah/	Sign
كار	French	/kār/	Bus
سوشال ميديا	English	/sawšal mīdyā/	Social media
ويكند	French	/wīkind/	Weekend
فيلم	French	/film/	Film
فيديو	French	/vīdyaw/	Video
إنترنت	French	/ʾintarnit/	The Internet
أونلين	French	/ʾunlīn/	Online
أوفلاين	English	/ʾuflāyn/	Offline
دوبامين	English	/dūbāmīn/	Dopamine
تخانسبوغ/ترانسبور	French	/trānspawr/ /tẖānspawġ/	Transport
فورنت	English	/furint/	Hungarian forint
ترام	French	/trām/	Tram
أوكي	English	/ʾawkay/	OK
بوكاديوس	Spanish	/būkādyus/	A traditional Spanish sandwich
روتين	French	/rūtīn/	Routine
كريسماس	English	/krismas/	Christmas
وي في	French	/wī fī/	Wi-Fi
إسبريسّو	French	/ʾisbrissaw/	Espresso
هوستل	English	/hawstil/	Hostel
بارفان	French	/bārfān/	Perfume
ميكخوند	French	/mikẖawnd/	Microwave
كيمونو	English	/kimawnaw/	Kimono
موتور	French	/mawtawr/	Motorcycle

بيتزا	French	/pītzā/	Pizza
كوفيد	English	/kuvid/	Covid
صالة	French	/ṣālah/	Salon
فوطة	Turkish	/fūṭah/	Napkin
ساري	English	/sārī/	Sari
وافلز	English	/wāfilz/	Waffle
شنتزل	English	/šnitzil/	**S**chnitzel
سال	French	/sāl/	Room/gym
طاجن	Greek	/ṭāğin/	Tajine

Appendix I

Transcription conventions

Symbol	Meaning
Curly brackets	Material excluded from coding system
Dash	A short pause
Three dots	A longer pause, unfinished speech
Comma	Partially falling intonation
Period	End of utterance
Question-mark	End of question-type utterance
Single slash	Marked emphasis
Double slash	Exaggeratedly marked emphasis
Colon	Lengthening of a vowel
Three exes	An unintelligible string
Normal font	MA
Bold font	English
Underlined	French
Italicized	Borrowing
Parentheses	Paralinguistic features
Square brackets	Overlapping speech
Double dash	Interrupted speech

Appendix J

Word clouds

French terms in daily routine

English terms in daily routine

French terms in travel

English terms in travel

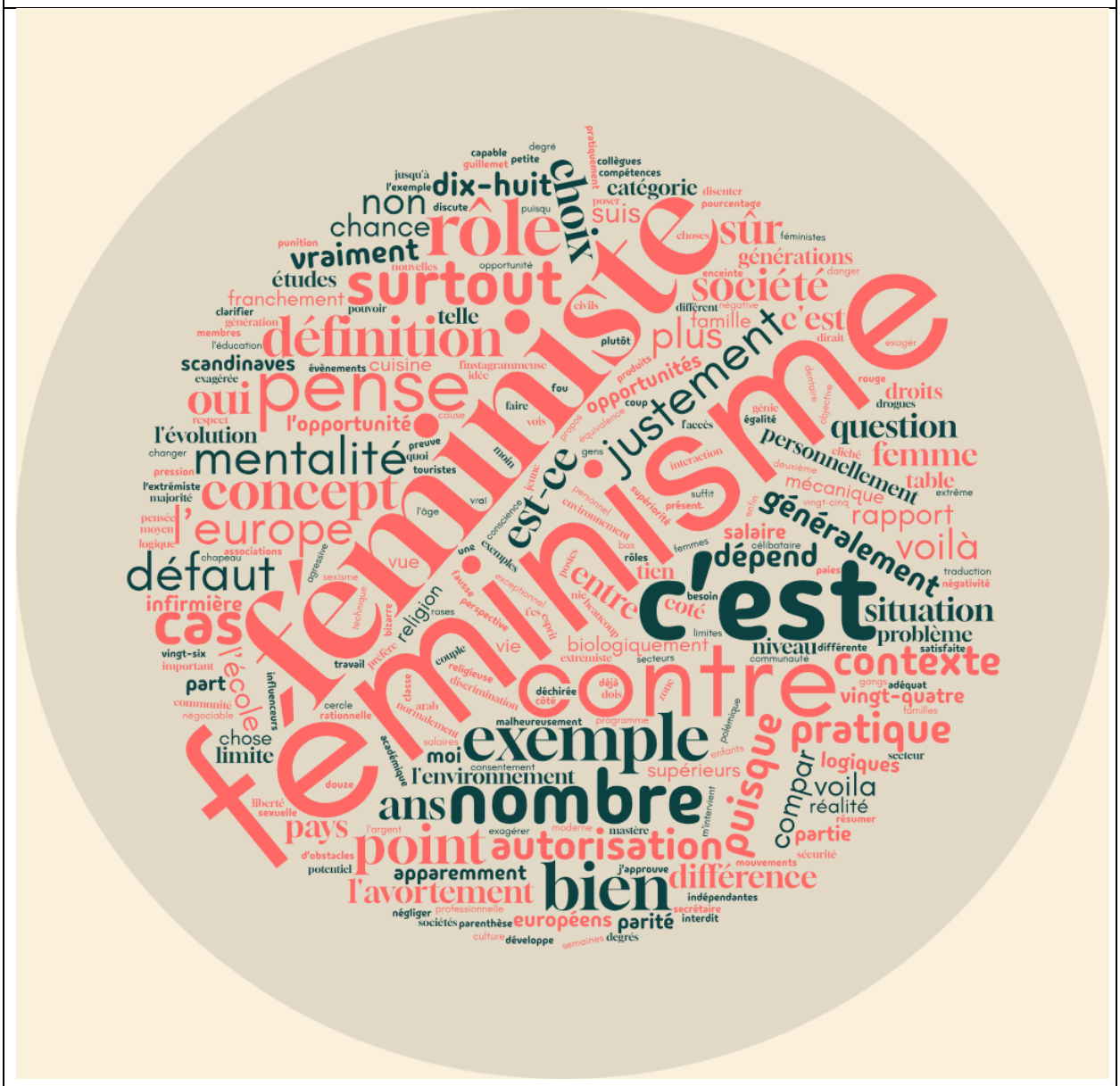
French terms in technology and communication

English terms in technology and communication


chance
charme
touche
non
présentable
famille
bizarre
quantité
vermicelle
activité
jours
justement
toute
moderne
goût
région
contre
couple
emballé
traditionnelles
culture
familles
information
enceinte
conséquence
sympa
Japonais
historien
disons
l'influence
n'ai
l'Algérie
réveillon
dépend
voilà
rare
première
une
sûrement
précise
personnellement
liquide
métrage
trois
presque
pense
cité
générations
confirmer
jeux
plats
puisque
trucs
soit
préfère
spécifique
lycée
bien
l'ambiance
lieu
feux
sûr
zone
différentes
situation
mode
part
coup
c'est
rapport
espace
ingrédients
est-ce
vaste
centre
sucré
l'accord
préférences
septembre
infinité
vrai
garanti
influences
surtout
l'époque
entre
modernes
long
classe
défilé
influence
traditionnelle
modernité
émissions
d'artifices
détails
touristique
malheureusement
familial
infinies
peut-être
majorité
plutôt
récupérable
nationalités

English terms in cultural celebrations

French terms in women's rights



English terms in women's rights