

Multilingualism Doctoral School

Faculty of Humanities

University of Pannonia

**Exploring the multilingual mind:  
Metalinguistic abilities and language learning motivation in  
Hungarian trilingual learners decoding an unfamiliar language  
system**

DOI:10.18136/PE.2025.962

Ph.D. Dissertation

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2025

## STATEMENT

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of Humanities in partial fulfillment of the requirements for the degree of Doctor of Philosophy. The content and research methodologies presented in this work represent the work of the candidate alone.

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**Exploring the multilingual mind:**

**Metalinguistic abilities and language learning motivation in Hungarian trilingual learners decoding an unfamiliar language system**

Thesis for obtaining a Ph.D. degree in the Doctoral School of Multilingualism of the University of Pannonia in the branch of the Faculty of Humanities

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## ABSTRACT

This study investigates the relationship between multilingual awareness and language motivation, through the application of Dörnyei's seven motivational constructs identified in a longitudinal study (Dörnyei et al., 2006) conducted from 1993 to 2004. These motivational components fall within the framework of the L2 Motivational Self System (L2MSS) that was developed to offer a more self-based understanding of language motivation. Building on prior research highlighting that metalinguistic and crosslinguistic awareness, as meta-emergent properties in multilingual individuals, expedite multiple language learning and use (Herdina & Jessner, 2002), this research aims to unravel Hungarian secondary school students' use of their multilingual background to decode texts in an unfamiliar language. This study explores whether a heightened level of meta- and cross-linguistic awareness correlates with stronger decoding skills, and how this awareness is connected to the motivational constructs that are identified in this study based on the Partial Least Squares Structural Equation Modelling (PLS-SEM). The study involves 134 Hungarian high school students, speakers of L2 English and L3 French, who are enrolled in a Hungarian-French bilingual program. Participants were administered the Language Experience and Proficiency Questionnaire (LEAP-Q), a language motivation questionnaire, an English proficiency test, a French proficiency test, a reading comprehension test in Italian, which is an unfamiliar language to them, and a retrospective questionnaire, investigating the process of decoding the novel language.

The results show a significant relationship between metalinguistic abilities and the ability to decode an unknown language. Students with heightened metalinguistic abilities show greater success in deciphering the Italian texts, as they reflected on similarities between their previously learnt languages and the Italian language at lexical, structural, morphological, and phonological levels. Linguistic self-confidence is shown to have a robust connection with metalinguistic and crosslinguistic thinking and reasoning. L2 and L3 proficiency also correlated with the students' ability to decode the unfamiliar language structures. Furthermore, the findings reveal a complex motivational profile, where students, despite being enrolled in a French bilingual program, exhibited greater motivation towards learning English, due to its global dominance across various platforms, social media, and educational resources. The study yielded different results regarding the different motivational constructs originally defined by Dörnyei et al. (2006), as some discrepancies were observed in factor loadings which consequently created a difference in the motivational models subsequently developed. The Ideal L<sub>n</sub> Self emerged as a central construct that not only influenced intended effort but also had close associations with other motivational dimensions. The results of the current research (i) highlight gripping features of how Hungarian L1 students process an unfamiliar language and (ii) underscore the importance of meta- and crosslinguistic awareness and language motivation in learning additional languages (L<sub>n</sub>), promoting the usefulness of having a rich linguistic background in L<sub>n</sub> acquisition.

Implications include the need for language teachers to raise students' metalinguistic and crosslinguistic awareness in the classroom. Given the role of these two properties in decoding new language systems, adopting multilingual teaching strategies and approaches in the Hungarian educational system would lead to further language development. National reforms in foreign language education in Hungary seem imperative in order to develop a stronger linguistic foundation in learners from a younger age. Furthermore, teachers and curriculum designers might need to re-consider their pedagogical approaches in teaching languages other than English.

**Keywords:** *metalinguistic awareness, crosslinguistic awareness, motivation, decoding unfamiliar language, bilingual program, multiple language learning*

## **DECLARATION OF ORIGINALITY**

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I declare that this is a true copy of my dissertation, including any final revisions, as approved by my thesis committee and my adviser, and that this dissertation has not been submitted for a higher degree to any other University or Institution.

*To my family*

## ACKNOWLEDGEMENT

I would like to begin by profusely thanking my supervisor, Professor Judit Navracsics, for her constant support, guidance, and encouragement, without which this work would not have been possible. Thank you for your flexibility, sage advice, unwavering belief in me, and for always being in my corner, pushing me to think deeper and aim higher. I remain so appreciative of every kind word, gesture, and moment of encouragement that you offered me throughout this journey.

My appreciation also extends to my former professors, now my colleagues, Dr. Szilvia Bátyi, Dr. Habil. Andrea Parapatics, Dr. Szilárd Szentgyörgyi, and Dr. Ildikó Hortobágyi, for their genuine encouragement to complete this research successfully.

A round of thanks is due to my beloved EASI team, for welcoming me with open arms and making me feel like part of the squad. Special thanks go to those whose support, kindness, positivity, and humor made this journey more meaningful and enjoyable. A special mention goes to Laszlo K., Csillingh, Andrea Sz., Sandor Cs., Szilard Sz., Petra I., Nikolett S., Eva F., and Zsofia, F., with whom I've shared multiple little adventures, laughter-filled lunch breaks, random coffee pauses, refreshing (with just the right amount of uphill struggles) hikes, unforgettable trips, and all the delightful everyday moments that quietly turn into lasting memories. I'd like to thank Laszlo in particular for his genuine kindness, humor, and unwavering friendship that brought light and laughter even to the busiest days.

I am grateful to the school principals and French teachers who facilitated my research within their institutions. My appreciation extends to all participants who took part in this study and assisted me in the data collection. Without their patience, time and sincere involvement, this study would never have taken shape.

I am especially indebted to my parents for their love, prayers, and sacrifices in nurturing my education. Your valuable guidance and unconditional support have always given me the strength to strive beyond limits and make you proud. I am also grateful to my dearest sister and brother who have always been the voice of motivation and reassurance and whose priceless encouragement gave me the confidence to dream big and strive for excellence.

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## List of abbreviations

<b>Abbreviation</b>	<b>Definition</b>
AVE	Average Variance Extracted
CEFR	Common European Framework of Reference for Languages
CEM	Cumulative Enhancement Model
CILS	Certificazione di Italiano come Lingua Straniera
CLI	Crosslinguistic Influence
CLIN	Crosslinguistic interaction
CR	Composite Reliability
DCT	Dynamic Complexity Theory
DELFL	Diplôme D'études en Langue Française
DMM	Dynamic Model of Multilingualism
DSCT	Dynamic System Complexity Theory
DyME	Dynamics of Multilingualism with English
EF SET	EF Standard English Test
EFL	English as a Foreign Language
ETS	Educational Testing Service
FL	Foreign Language
L2MSS	L2 Motivational Self System
LEAP-Q	Language Experience and Proficiency Questionnaire
M	Means
MAQ	Metalinguistic Awareness Questionnaire
MAT	Metalinguistic Awareness Test
MLA	Metalinguistic Awareness
MP	Multilingual Proficiency
MT	Mother Tongue
PLLKE	Prior Linguistic Learning Knowledge and Experience
PLS-SEM	Partial Least Squares Structural Equation Modelling
QCA	Qualitative Content Analysis
SD	Standard Deviation
SEM	Structural Equation Modeling
SLA	Second Language Acquisition
SRMR	Standardized Root Mean Square Residual
TAP	Think-aloud Protocol
TCF	Test de Connaissance du Français
TFI	Test de Français International
TLA	Third Language Acquisition
TPM	Typological Primacy Model
VIF	Variance Inflation Factor
XLA	Crosslinguistic Awareness
XLI	Crosslinguistic Intuition

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# Chapter 1. Introduction

## 1.1. Background and rationale of the study

In an increasingly globalized world, multilingualism is regarded as an asset, essential for personal development, employability, global connectivity, and active citizenship as delineated by EU Member States in the Council recommendation on key competences for lifelong learning (The Council of the European Union, 2018). Rapid increases in global mobility, migration, and virtual connectivity have led to the high value associated with multilingualism and multilingual practices which became crucial for successful navigation of different socio-cultural contexts and a proper meaningful involvement in global citizenship. Learning to communicate in more than one language, therefore, opens doors for better career prospects, academic opportunities, economic benefits, cross-cultural communication and understanding, and personal fulfillment. Against this backdrop, educational systems around the world have striven to promote multilingual education and started to re-assess the goals and strategies of language learning and teaching, underscoring the need to develop students' ability to effectively learn and use several languages. As multilingual education has grown to be of paramount importance, third and additional language learning has been rethought as a complex, multifaceted process, where languages in a multilingual system are viewed as dynamic and interdependent and therefore should be learned in relation to one another rather than separately (Herdina & Jessner, 2002). In accordance with this view, multilingual awareness which encompasses the two closely intertwined metalinguistic awareness, i.e., the ability to reflect on and manipulate languages, and crosslinguistic awareness, which is the ability to identify similarities and differences between one's languages, has gained significant prominence and been advocated as a crucial factor contributing to L<sub>n</sub> learning (Jessner & Allgäuer-Hackl, 2020). These forms of awareness are now considered as essential properties of multilingual learning that enable learners to reflect on their languages, transfer knowledge from one language to another, and make educated guesses about unfamiliar language structures. Psycholinguistic research, over the years, has shown that metalinguistic thinking and crosslinguistic reasoning serve as cognitive and strategic bridges in additional language learning, which calls for the development of these skills within multilingual learning environments for a better and more successful language learning experience.

Within this broader trend, despite the well-established advantages of multilingualism and the European Commission's emphasis on promoting multilingualism in education, a

monolingual mindset still prevails in the Hungarian educational system, in the paucity of policies that could promote students' metalinguistic and crosslinguistic awareness. Hungarian schools, which once adopted an outright monolingual educational paradigm, have striven to establish Hungarian-foreign language bilingual programs and promote foreign languages in schools with the change of the regime in 1987. Despite these endeavors, the prevailing pedagogical approach remains essentially monolingual in practice. Nonetheless, Hungarian high schools promoting bilingual education through the implementation of such programs as the Hungarian-French bilingual program may serve as a paragon of multilingual competence development. These programs are designed to enhance students' proficiency in a certain language, like French, through content and language integrated instruction while also introducing another foreign language as a school subject. Ideally, such bilingual settings not only enhance learners' overall linguistic proficiency and communicative competence but also foster metalinguistic and crosslinguistic awareness, which helps promote additional language learning in general. These dimensions are critical in multilingual development, as they allow learners to draw on their previously learned languages to comprehend new input. In contexts like Hungary, where a monolingual mindset remains dominant in language teaching practices, it would be intriguing to explore how students in these bilingual programs engage with and employ their linguistic repertoire when confronted with an unfamiliar language system, which reveals their level of multilingual awareness. It is expected that students enrolled in such programs are able to reflect and use their languages effectively when decoding unfamiliar language structures. This might highlight the need for national reforms in foreign language education that place more emphasis on the importance and utility of foreign language learning through adopting innovative teaching methods and approaches to enhance Hungarian learners' multilingual competence.

Despite the promising potential of bilingual programs to promote meta- and crosslinguistic awareness and improve student achievement, learners' success is driven not only by instructional methods or linguistic exposure but also by learning motivation. Motivation, which is often regarded as a key variable that can determine language learning success, is closely connected to learners' emotional and cognitive engagement with language. Probing into the relationship between such an affective factor as motivation and a cognitive component like multilingual awareness can lend insights into how learners engage and interact with their languages and whether these two constructs reinforce each other. An environment such as that of Hungarian-French bilingual programs, where learners are

constantly navigating three linguistic systems with a special focus on the development of French, can be a fertile ground for investigating the interplay between affective and cognitive factors. English is the most widely taught foreign language in these bilingual settings and in Hungarian mainstream curricula in general, given its perceived pragmatic value in today's globalized world. Viewing it as an asset tied to professional opportunities and economic benefits, English presumably occupies an important position in learners' linguistic repertoires due to its ubiquity across various media and digital platforms. However, the structure of these Hungarian-French bilingual programs aims at developing a sustained interest in learning French due to its instructional relevance and the cultural, academic, and career opportunities it may offer. This dichotomy raises questions about students' motivational dispositions towards learning both languages. The existing literature on motivation in the Hungarian context, which is dominated by Dörnyei and Csizér's framework, focuses on traditional language learning classrooms and does not address the motivational complexities emerging from the coexistence of English, as a global lingua franca, and a program-targeted language like French. Studying learners' motivational orientations towards both languages, within Dörnyei's (2006, 2009) L2 Motivational Self System (L2MSS), is particularly relevant, considering that the hegemony of the English language might overshadow French.

## **1.2. Problem statement and purpose of the study**

Over the past two decades, cognitive and psycholinguistic research has examined cognitive and metacognitive phenomena within the context of multilingual systems (Spechtenhauser & Jessner, 2024). Nonetheless, a research gap remains with regard to the role of metalinguistic and crosslinguistic awareness in third and additional language learning in general. This dissertation's main goal is to fill this gap especially that a remarkable limitation in this research area is the prevalence of studies investigating monolingual and bilingual contexts. The literature on the development of metacognitive abilities, including metalinguistic reasoning, within multilingual systems involving three or more languages thus remains limited. Consequently, addressing this gap is imperative to foster a comprehensive understanding of how metalinguistic thinking and crosslinguistic reasoning operate and evolve in a complex and dynamic multilingual systems context. This study elucidates the effect of metalinguistic awareness, intertwined with crosslinguistic awareness, on the decoding of an unfamiliar language system from a dynamic and complex theory perspective. Given that the majority of existent studies have researched metalinguistic abilities from different facets using Pinto test batteries (see Pinto et al, 1999) which were originally

developed to assess metalinguistic awareness in Italian or English then after translation were globally used to measure it in different other languages, it would be intriguing to investigate meta- and crosslinguistic abilities as a metacognitive process leveraged to help students comprehend a novel and unfamiliar language system. Metalinguistic experiments usually assess learners' word and/or syntactic awareness from an output-oriented viewpoint, typically in bilingual or monolingual settings (Spechtenhauser & Jessner, 2024). Therefore, a thorough examination of the involvement of this cognitive factor in the decoding process and its connection to crosslinguistic awareness is imperative and would contribute to the research on multiple language learning.

Intriguing questions might arise regarding the development of multilingual awareness and its implications in multilingual contexts, where for instance learners receive bilingual education while learning a foreign language as a school subject, as is the case of the participants in the current study. It is therefore pertinent to explore the involvement of both meta- and crosslinguistic awareness in facilitating multiple language learning. Studying learners' metalinguistic and crosslinguistic thinking when confronted with an unfamiliar language system could unravel the intricate dynamics of (further) language learning and highlight the role of metalinguistic abilities in expediting subsequent language acquisition and developing learning strategies. In the underexplored Hungarian context, studying the ways learners draw upon their previously learned languages in decoding a novel linguistic system would shed light on the extent to which Hungarian bilingual education fosters strategic language processing, in light of the underlying pedagogical practices that remain deeply rooted in monolingual traditions. The findings might potentially have direct pedagogical implications for bi- and multilingual education in Hungary and the current Hungarian structure of second and foreign language instruction.

Furthermore, given that English occupies a prominent global position and is widely used across different platforms and fields, it is intriguing to explore students' motivational dispositions towards French which is promoted within the bilingual program as the language of instruction and English as the more globalized language. Studying the relationship between language motivation and metalinguistic abilities within the framework of dynamic and complex systems theory is also important for gaining insights into the factors that might influence learners' meta- and crosslinguistic development and language learning. Such an approach allows for a more nuanced understanding of how different motivational factors interplay in multiple language learning environments. To date, there appears to be a lack of

empirical research exploring the connection between language proficiency, motivation, and crosslinguistic and metalinguistic abilities and to my knowledge, no such investigation has been carried out in the Hungarian context, particularly within bilingual programs such as the present study's setting. Hence, this study aims to fill this gap with relation to the interplay of these factors in the language learning process. Moreover, this research explores the seven motivational constructs developed by Dörnyei et al. (2006) to assess language motivation in Hungarian learners. These dimensions were fundamental in developing the L2MSS and reshaping the understanding of L2 motivation. However, the existent body of research that used Dörnyei et al.'s (2006) questionnaire is scarce and has shown a limited understanding and inconsistent results about these attitudinal and motivational constructs across different contexts. Hence, this study revisits these dimensions within the L2MSS framework, applying them in a relatively different educational context in an attempt to provide new data and analysis that may ultimately contribute to the understanding of L<sub>n</sub> motivation and its relationship with cognitive factors in L<sub>n</sub> learning. This part of the study is partly driven by curiosity to explore whether the questionnaire's original factor structure would remain the same within the current study's context. Given the dynamic nature of language learning environments, particularly the growing significance of English and the presence of Hungarian-foreign language bilingual programs, it was interesting to investigate whether the original motivational/ attitudinal constructs would persist, or merge, to adapt to the current educational and sociocultural circumstances.

### **1.3. Research Questions**

In light of the rationale and purpose of the study, the current research aims to answer the following questions:

RQ1: How do learners apply their metalinguistic abilities in decoding an unfamiliar language system?

RQ2: What is the relationship between L2 and L3 proficiency and metalinguistic and crosslinguistic skills applied in decoding an unfamiliar language system?

RQ3: Would (psycho)typological proximity substantially aid in decoding the unknown language system? Which of the previously acquired languages would be selected as the primary source of transfer?

RQ4: What would learners' motivations and attitudes be towards learning French (L3), the language of instruction in their bilingual program, and English (L2), the more globally dominant language? How would this relate to their intended effort?

RQ5: How would the original factor structure of the motivation questionnaire (Dörnyei et al., 2006) change in light of the current study's circumstances?

RQ6: What is the relationship between the different motivational, attitudinal dimensions in learning L2/L3 and the unfamiliar language test scores which reveal the extent to which learners engage in metalinguistic and crosslinguistic reasoning?

RQ7: What is the connection between the various motivational, attitudinal dimensions and L2/L3 proficiency?

#### **1.4. Research Hypotheses**

It is hypothesized that:

H1: Learners with higher scores on the unfamiliar language test will show higher metalinguistic and crosslinguistic awareness as they'll employ crosslinguistic strategies and rely on lexical, phonological, and structural similarities to decode the novel language.

H2: There will be a significant positive correlation between L2 and L3 proficiency and metalinguistic and crosslinguistic skills applied in decoding the unfamiliar language system, with higher L2/L3 proficiency enhancing learners' ability to recognize linguistic patterns and transfer knowledge effectively.

H3: (Psycho)typological proximity will play a crucial role in aiding learners' decoding of the unfamiliar language.

H4: Despite the global status and instrumental value of English, learners will exhibit higher motivation and more positive attitudes towards learning French, the language of instruction in their bilingual program.

H5: There will be significant changes in the factor structure of the motivation questionnaire with a possible emergence of new motivational constructs.

H6: Certain dimensions of motivation and attitudes toward L2/L3 learning will be positively associated with the decoding task scores, as highly motivated learners are expected to engage more actively with their linguistic knowledge and apply metalinguistic strategies more effectively in crosslinguistic analysis.

H7: Certain motivational dimensions will be positively associated with L2/L3 proficiency, with greater motivation correlating with higher proficiency levels.

## **1.5. Structure of the dissertation**

This dissertation comprises six chapters including the current which presents the rationale of the study, outlines the research problem, and formulates the research objectives. The study investigates metalinguistic and crosslinguistic abilities in trilingual Hungarian students decoding an unfamiliar language system and the connection between these cognitive components and language learning motivation as an affective factor. These central dimensions are explored within multilingualism research and motivational theory. Chapter 2 provides a comprehensive review of the literature, covering theoretical models of multilingualism with a particular focus on the Dynamic Model of Multilingualism, the development and importance of meta- and crosslinguistic awareness in (multiple) language learning, and Dörnyei's motivational framework. Previous research centering on these theoretical concepts is synthesized to highlight the research gap and establish the significance of the current study. The following chapter (Chapter 3) presents the research methodology, including the research design, setting, sample, sampling methods, materials, data collection procedures, data analysis and coding criteria, and ethical considerations. The study adopts both quantitative and qualitative approaches that are explained in detail in this chapter. Chapter 3 also meticulously describes the piloting phase and validation processes that contributed to the reliability and validity of the instruments. A structured presentation of the findings is provided in Chapter 4. Descriptive statistics, correlation and regression analyses, factor analysis, and Partial Least Squares Structural Equation Modelling (PLS-SEM) are used to answer the research questions formerly laid-out. Findings drawn from the quantitative and qualitative analyses are then discussed in Chapter 5 in light of the existing literature and theoretical perspectives. This chapter highlights the complexity of multilingual competence, the importance of the development of multilingual awareness, and the motivational orientations of students learning French (L3), the language of instruction in their bilingual program, and English (L2), the foreign but more globally dominant language. Conclusion are drawn in the subsequent chapter (Chapter 6) which also includes theoretical and pedagogical implications for bi- and multilingual education in Hungary, curriculum design, and language teaching. The chapter concludes with suggestions for future researchers to follow for a better and more thorough understanding of the concepts involved in the current context.

## **Chapter 2. Literature review**

### **2.0. Introduction**

This chapter expounds the literature on multilingual awareness, particularly meta- and crosslinguistic awareness, multiple language learning, and language learning motivation, whose combination is presented in this research. Each part in the current chapter extensively details the theoretical background of each aspect involved in this study. Previous research is described and synthesized to establish a solid ground for discussing the findings within current multilingual research. As this research is a combination of several constructs to fill the existing research gaps, it is essential to give a detailed description of the previously known individual research components.

### **2.1. Notions on multilingualism**

Multilingualism is a complex phenomenon in all its aspects. It is vibrant, intriguing and one of the most globally important social practices (Aronin, 2019). It is viewed as “a natural state of humankind” (Flynn, 2016, cited in Aronin, 2019). Multilingualism, including bilingualism, has garnered international public interest, as most of the world’s population lives in either bilingual or multilingual linguistic environments (Göncz, 2021). Here, it seems important to assume that multilinguals are not the same as bilinguals. There is undoubtedly much in common between bilingualism and multilingualism as both phenomena are defined as the ability in an individual to use at least one language beside the mother tongue (Aronin, 2019). However, similarity does not indicate identity. Beyond obvious surface features and despite the prevailing claim equating bilingualism and multilingualism, the disparity between the two has become eminent (De Angelis, 2005; Kemp, 2001, 2007, 2009). In fact, bilingualism had long been used as a “blanket term” to refer to the alternate use of two or more languages, hence entailing multilingualism (Butler, 2013, pp. 110-111). This is the traditional view that reflects the significance of research focusing on two languages rather than multiple languages. According to Bassetti and Cook (2011), bilingualism typically refers to two languages but can also include additional languages. Another position on the definition of bilingualism versus multilingualism holds that multilingualism is the use of two or more languages (Aronin & Singleton, 2008), with bilingualism considered an instance of multilingualism. An alternative view that is mostly common among scholars researching trilingualism and third language acquisition posits that bilingualism and multilingualism are two different phenomena: while the term bilingual is used for users of two languages, multilingual refers to users with three or

more languages (De Groot, 2011). The stance in this study is to view bilingualism and multilingualism as two different phenomena, given the greater complexity of multilingualism. The cumulative data from a variety of disciplines that point to the divergence of bilingualism and multilingualism from physiological, cognitive, emotional, pedagogical and social perspectives are critical as they have serious implications for the way we deal with the phenomena of individual and societal bi- and multilingualism (Aronin, 2019). In this respect, Aronin and Jessner (2015, p. 281) state that:

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. The main difference between bilingualism and multilingualism is complexity.

The need for cross-cultural communication and the growing concern to preserve linguistic and cultural diversity have increased the number of people learning multiple languages (Göncz, 2021). A growing number of studies have addressed the concept of multilingualism from different perspectives in disciplines including sociolinguistics, psycholinguistics, and education. Multilingualism defines the ability of an individual to use different linguistic codes (Aronin, 2019; Cenoz, 2013). In this vein, it can be defined as “the use of three or more languages” by an individual or “the ability to speak several languages” (Aronin, 2019, p. 3). Multilinguals use their languages for different reasons and in different social contexts. Indeed, “they may use them separately or codeswitch” (Kemp, 2009, pp. 12-13). A multilingual’s competence in each language may vary according to a number of factors including occupation, register, and education (McArthur, 1992).

Multilinguals’ experiences in acquiring and using multiple languages differ. An individual can acquire different languages simultaneously through early exposure to two or more languages or successively through late exposure to additional languages (Cenoz, 2013). The level of proficiency in all the languages spoken by a multilingual has often been considered when researching multilingualism (e.g., Cenoz, 2013; Kemp, 2009). In this regard, researchers have defined multilingualism differently that most definitions cluster into two groups. The first group underscores the necessity of a maximal proficiency in that being a multilingual suggests speaking all languages with an equal fluency, which is an impossible requirement even for bilinguals. The second group opts for a minimalist view advocating that a multilingual is an individual who uses more than one language in everyday life regardless of

his/her proficiency level (Basseti & Cook, 2011). Baker (2011) states that it is rare to find balanced multilinguals, i.e., individuals with the same level of proficiency in all their languages, and that one language is always dominant. According to Skutnabb-Kangas and McCarty (2008), perfect command and balance of an individual's multiple languages is no longer to be considered as the main characteristic when defining multilingualism (Cenoz, 2013).

Recent definitions of multilingualism do not require native-like proficiency in all the languages spoken by an individual due to two simple reasons; the first is that nativeness is now regarded as a matter of age of acquisition for many learners, and secondly, researchers have started to work within a more recent multilingual paradigm that suggests that all languages within the individual's system complete each other (Kemp, 2009). This holistic view proposes that each language in the multilingual system is a part of the whole system and is different in representation and processing from the language of a monolingual individual. This recent view of multilingualism is particularly rooted in Grosjean's (1997) Complementarity Principle which emphasizes the holistic view of bilingualism. According to Grosjean, bilinguals acquire and use each of their languages for different purposes, in different situations and contexts, with different people. Hence, their fluency in each of their languages would depend on the need for and the frequency of use of the language. To this end, a multilingual's proficiency in each of his/her languages usually differs and might fluctuate over time (Herdina & Jessner, 2002). Above all, complexity is the nature of a multilingual's use of their languages (Kemp, 2009).

## **2.2. Models specific to multilingualism (theoretical models of multiple language learning)**

The conceptual base of multilingualism draws from various theories originally developed in regard to bilingualism and includes theoretical explanations of such bilingual matters as language contact, code-switching, diglossia, bilingual speech processing, and interference (Aronin, 2019). While some models established to explain bilingualism can apply to multilingual contexts and contribute to multilingualism research, they do not suffice for an overarching explanation of the intricate phenomenon of multilingualism due to its increased level of complexity.

Once the distinction between multilingualism and bilingualism on both theoretical and practical levels was established, it has become evident that not all methods and models of bilingualism can be applied to multilingual situations, due to the specific complex nature of

multilingualism. (Aronin, 2019). Multiple models have been developed to specifically elucidate multilingualism and its related phenomena. Most of the current multilingualism models center on the process of multiple language acquisition (Aronin, 2019). All of them underline the interrelations between the language systems in a multilingual brain and the quintessential role of previously acquired languages in learning additional ones. These models are the Factor Model by Hufeisen (1998, 2010), the Role-function Model by Williams and Hammarberg (Hammarberg, 2001), the Multilingual Processing Model by Meißner (2004), and the Dynamic Model of Multilingualism (DMM) developed by Herdina and Jessner (2002).

### **2.2.1. Factor Model**

This model (Hufeisen, 2010) is a comprehensive framework that tends to identify the interconnected factors that constitute the conditions for the initial stages that learners go through in their multiple language learning processes. It captures the conditions for acquiring an L1 and learning an L2, L3, and L4/Lx (Hufeisen & Jessner, 2019). Each of the presented factors comprises a group of aspects with similar attributes. With the acquisition of each language, a new bundle of factors is introduced, contributing to the complexity of the factor model. Factors that are pivotal and concomitant in L1 acquisition are:

- Neurophysiological factors, which form the basis and the prerequisite for general language learning/ acquisition, and without which language acquisition would be challenging, deficient, or unsuccessful.
- Learner external factors, which include such features as learning environment and the amount and type of input learners are exposed to.

The L2 learning process involves additional factors delineated as follows:

- Affective factors include features such as learning anxiety, motivation towards the target language(s), attitude towards the target language(s) and culture(s), assessment of own language proficiency, and perceived closeness/ distance between languages.
- Cognitive factors encompass such features as language awareness, metalinguistic awareness, learning awareness, learner type awareness, and learning strategies.
- Linguistic factors consist of the learner's prior knowledge of L1(s).

Hufeisen's model focuses on the salient disparities between learning an L2 and learning an L3. These differences constitute the justification for dismissing L2 models in L3 learning contexts. The model advocates that during the initial stages of learning an L2, the learner is

unexperienced and unfamiliar with the process of learning additional languages. “An L3 learner, by contrast, is expected to already be acquainted with the ‘foreign language learning process’ and has (consciously or subconsciously) already collected individual techniques and strategies to deal with this type of learning situation, albeit with different degrees of ultimate success” (Hufeisen & Jessner, 2009, p.124). The factor model assumes that at and after onset of learning an L2, a foreign language learning competency which promotes individual learning strategies is established (Hufeisen, 2018). The new factor-bundle is described as follows:

- foreign language specific factors, which consist of the learner’s individual foreign language learning experiences, strategies, and interlanguages of previously learned and target languages.

The linguistic bundle of factors expands accordingly with each language learning experience (Hufeisen & Jessner, 2019). In L3 acquisition, the role of L2 as a bridge language is pronounced regardless of the typological similarity between the L2 and the L3 (Hufeisen & Jessner, 2019). Moving from learning one language to another, the language specific factor bundle further develops to include L1, L2, L3, and Ln. As the repertoire of languages gets richer, the learner would rely on greater linguistic resources and a more developed language awareness, while learning the target language (Hammarberg, 2018). All factors in the model interact with each other and affect the learning situation (Hufeisen & Jessner, 2019). In fact, certain factors might emerge as predominant, thereby strongly influencing the learning situation, while other factors might potentially weaken in significance and relevance.

### **2.2.2. The Role-function Model**

This model (Williams & Hammarberg, 2001) is based on substantial long-term conversational data collected from Sarah Williams, an English native speaker who had studied French, Italian, and German, before embarking on a journey of mastering Swedish, the target language under investigation. Björn Hammarberg was Sarah’s interlocuter in the study. The model posits that, depending on their status, the various background languages at a learner’s disposal appear to play different roles in the (spoken) development of the target language (Marx & Hufeisen, 2004). Only one language would, however, take over the role of the default supplier, depending on a set of criteria. Hammarberg proposes four distinct criteria that a language needs to meet in order to be chosen as the default supplier language; typological similarity/psychotypology, i.e. how similar or more preeminently, how related the learner thinks the languages are, proficiency, i.e., how proficient the learner is in the

languages spoken, recency, i.e. how often the default supplier language is used, and the language' status as an L2 inasmuch as foreign languages are more highly to be selected as default suppliers than L1s (Marx & Hufeisen, 2004).

Hammarberg's research findings (2001) have confirmed that prior knowledge of L2s exert significant influence on the learner's L3 and that the L2, generally, takes over the role of the supplier, while the L1 prevails in an instrumental role. The L1, in Williams' case was being used as a support to acquire new terms and expressions in the target language fulfilling the role of an external instrument language during Swedish interactions, whereas the L2 undertakes a supplier role in helping the learner construct novel L3 words and cope with the new articulatory patterns of the Swedish language (Fernandez & Brito, 2007). In fact, the factor that appears to be decisive in selecting L2 German as a default supplier is its L2 status. The fact that German, like Swedish, is a foreign language increases its likelihood to be more activated than L1 in early L3 acquisition, on the grounds that an L2 acquisition mechanism type would be reactivated in L3 learning (Hammarberg, 2001). Another reason for the use of L2 as a supplier is the learner's tendency to suppress L1 as "non-foreign" and rather orientate oneself towards a previously learnt foreign language to approach the L3 (Hammarberg, 2001, p. 37). The L2, in Williams' case, influences spoken production on a morphological word construction level as well as on a phonological level. "In SW's case the construction of the lexeme is often influenced by an external supplier language, mostly L2 German," while "[t]he influence from L2 on phonology and phonetic settings takes place in the phonological coding in the formulator and the articulator" (Hammarberg, 2001, pp. 37-38). Hammarberg (2001) advocates possible reasons for the use of one language as the default external supplier language. In one scenario, L2 German outranks the other foreign languages in conditioning factors, namely, typology, proficiency, recency, and L2 status, thereby winning the competition for activation (Hammarberg, 2001). In another scenario, this language fulfills a constantly prominent role as a favored supplier, resulting in its regular activation during utterance production (Hammarberg, 2001).

### **2.2.3. Multilingual processing model**

The crux of Meißner's multilingual processing model (Meißner, 2004), which is the base for most EuroCom projects promoting an intercomprehension based method for rapidly acquiring foreign languages and fostering plurilingualism, is a spontaneous learner grammar. This constructivist model tends to explain L3 acquisition from a concept of intercomprehensibility between etymologically related languages. It elucidates the processing of texts written in a

language the learner has never encountered but is etymologically related to either their first or another foreign language. Meißner (2004) asserts that when encountered with a Latin-based foreign language L3, learners draw upon patterns known to them from previously learnt Latin-based languages to formulate hypotheses about the novel language. During the initial stages of L3 acquisition, learners heavily rely on the grammatical and lexical systems of the languages previously learnt, selecting either L1 or L2 depending on the typological similarities with the target language. As L3 proficiency grows, learners' language learning hypotheses are revised and developed towards L3 systems. Learners constantly formulate, test, reject, and approve hypotheses related to the new language, thereby constructing a spontaneous hypothesis learner grammar (Hufeisen & Jessner, 2019).

Similar to the role Function Model, Meißner's model suggests that learners use one or more bridging languages that they have already acquired to comprehend the target language in order to be called on when decoding the new foreign language. However, these bridges need to be close in genetic type to the target language and the learners have attained a certain level of proficiency in them (Meißner, 1998, in Marx & Hufeisen, 2004). Learners also need to be instructed on how to use the knowledge of previously learnt languages as bridge languages. The existence of such bridge languages is a prerequisite for the construction of a spontaneous grammar, as they function as a matrix against which the new structures and lexicon are contrasted and compared.

This development of a spontaneous grammar undergoes four different stages (Hufeisen & Jessner, 2019; Jessner, 2008). In the first stage after the initial encounter with the new language, a first spontaneous grammar of the target language is hypothesized. This rudimentary understanding is facilitated by the bridge language. The generation and continuous revision of the spontaneous hypothesis grammar is dynamically extended, by systemizing and comparing the target language input to previous hypotheses. Following this stage, an interlingual correspondence grammar is established via the spontaneous grammar which generates interlingual correspondence rules. These rules vacillate between prior linguistic knowledge of the bridge language(s) and the increasing knowledge of the novel language system and gradually develop to resemble the latter. Transfers between the source language(s) and the target language are prominent aspects of this interlingual correspondence grammar. In the third stage, a multilingual intersystem is established which stores and saves all successful, as well as unsuccessful, interlingual transfer processes. It consists of transfer bases which provide learners with an ample basis for deciphering and understanding the target

language. Six such transfer bases are introduced by the multilingual processing model: communicative strategy transfer, transfer of interlingual processing procedures, transfer of cognitive principles, transfer of pro- or retroactive overlap, learning strategy transfer, and transfer of learning experiences. In the fourth and final stage, learning experiences in the new language are stored as a collection of metacognitive strategies. Every new language learnt expands the learner's plurilingual intergrammar/ multilingual knowledge system, which contains correspondence rules, both positive and negative, between all of the known languages and functions as a foundation for all future languages that are to be learnt. Nonetheless, this paradigm applies solely to receptive and not to productive competencies in a foreign language and must therefore be utilized appropriately.

#### **2.2.4. Dynamic Model of Multilingualism**

Herdina and Jessner (2002) have introduced a holistic approach to multilingual development that views language systems within the multilingual system as dynamic and interdependent, interacting and influencing each other over time. The Dynamic Model of Multilingualism or DMM maintains that complex and dynamic interactions between multiple languages in the brain influence the development of the entire multilingual system (Jessner, 2008; Jessner et al., 2016). From a DMM perspective, multilingual acquisition processes are enhanced by strong synergetic effects developed in experienced multilingual learners who seem to accumulate metalinguistic and metacognitive knowledge as multilingual learners and users (Jessner, 2019). One can thus assume that bi-/multilingualism is associated with the development of metalinguistic ability and awareness. DMM applies the Dynamic Systems Complexity Theory (DSCT) to provide a holistic and dynamic view of multilingualism and to identify synergetic developments across the multilingual's languages (Clyne, 2003).

According to DSCT, the multilingual system is a dynamic, adaptive, nonlinear, and complex system that fluctuates over time due to the perceived communicative needs of a multilingual speaker (Hufeisen & Jessner, 2019). It has the ability to adapt to temporary changes in the systems' environment and the ability to develop new system properties in response to altered conditions (Herdina & Jessner, 2002). It has been stated that multilingual development changes over time, resulting in language attrition and/or loss (Herdina & Jessner, 2002). Variation in multilingual development and use is strongly connected to the system's dependence on social, psycholinguistic, and individual factors (Herdina & Jessner, 2002). Language learning mode, be it natural, instructional, or a combination of both, is also viewed as a crucial factor affecting the development of a multilingual repertoire and resulting

in the dynamics of language systems involved in multilingual development (Cenoz & Genesee, 1998). Furthermore, multilinguals' communicative needs are perceived as the driving force behind language learning, use, and consequently dynamics. Since "every complex system is a changing part of a greater whole, a nesting of larger and larger wholes" (Briggs & Peat, 1989, p. 148, in Jessner, 2008), the DMM presents a dynamic view of multilingualism, assuming that the coexistence and hence interaction and connectedness of languages results in the development of the overall multilingual system.

The model language systems (LS<sub>1</sub>/LS<sub>2</sub>/LS<sub>3</sub>/LS<sub>4</sub>/ etc.) in the DMM are viewed as interdependent and not autonomous systems as perceived in traditional transfer research (Hufeisen & Jessner, 2019). The behavior of each language system is primarily determined by the behavior of previous and subsequent language systems (Hufeisen & Jessner, 2019). In the DMM, the dynamics of language systems are related to language maintenance (Herdina & Jessner, 2002). It is claimed that the learner's resources are limited i.e., the learner has a definite amount of time and energy to devote to learning and maintaining a language. As a result, in a psycholinguistic context, the learner will start losing knowledge of some language aspects provided that not much time and effort is spent on refreshing the knowledge of the various languages s/he might know (Jessner, 2008). Thus, language system maintenance results in an adaptive process in which language proficiency is adjusted to meet perceived communicative needs. Defying the monolingual norm in language learning presuming that native-like proficiency should be attained, a DMM approach to multilingual learning and proficiency views domain-specific as reasonable and acceptable (Hofer & Allgäuer-Hackl, 2018). Ultimate attainment of proficiency in any language is perceived as unrealistic as a degree of underachievement is to be expected (Herdina & Jessner, 2002). In this vein, multilingual proficiency has been described as the dynamic continuous interaction among the manifold psycholinguistic systems (LS<sub>1</sub>, LS<sub>2</sub>, LS<sub>3</sub>, LS<sub>n</sub>) in which the individual languages (L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub>, L<sub>n</sub>) are integrated (Jessner, 2008). It has been asserted that the psycholinguistic systems of the multilingual learner/speaker, which are constantly changing, interact with each other in a nonadditive but cumulative way (Jessner, 2008).

Consequently, multilingual proficiency (MP) can be defined as the dynamic interaction between the manifold language systems (LS<sub>1</sub>/LS<sub>2</sub>/LS<sub>3</sub>/LS<sub>n</sub>/ etc.), cross-linguistic interaction (CLIN), and the M(ultilingualism)-factor, as shown in the following crude formula:

$$LS_1/LS_2/LS_3/LS_n + CLIN + M\text{-factor} = MP$$

The learner system, similar to all other dynamic systems in nature, is in constant flux (Herdina & Jessner, 2002), as it is an open system that is deeply intertwined with and inseparable from its surrounding environment and hence subject to influences from outside (De Bot, Lowie & Verspoor, 2007). From a DSCT perspective, multilingual systems differ from monolingual systems as the former contain components that are nonexistent in monolingual systems (Hufeisen & Jessner, 2019). Even the components that both systems might share have a different significance within the multilingual system. “The main difference between bilingualism and multilingualism is complexity” (Aronin & Jessner, 2019, p. 281). The degree of complexity is different between the systems. It is the active interaction between the parts involved in a system, leading to various unpredictable outcomes, that matters in complexity (Hufeisen & Jessner, 2019). Hence, it is believed that multilingualism is different and more complex than bilingualism. The DMM is consequently established as an autonomous model of multilingualism that serves as a bridge between second language acquisition and bilingualism as well as a paradigm that centers on more than two languages (Jessner, 2012). In the DMM, multilingual awareness has been advocated as a crucial factor contributing to the catalytic accelerating effects that bilingualism can have on third language acquisition (TLA) (Jessner, 2008). The so-called Multilingualism factor (M-factor) refers to all the qualities developed in a multilingual speaker/learner due to the active interaction between all the individual language systems involved in a multilingual system, which distinguishes a multilingual from a monolingual system (Jessner, 2008).

#### **2.2.4.1. M(ultilingualism)-factor**

Since languages interact and influence each other in a multilingual system, multilingual learners are able to form associations between their different languages and transfer what they know from one language to another (Hofer & Allgäuer-Hackl, 2018). Their ability to form these links and control their languages indicates their development of special multilingual abilities, i.e., meta- and cross-linguistic skills, and metacognitive abilities alongside “a range of other multilingual competences, which include flexible switching, translation skills, cross-language meaning negotiation skills and mediation” (Hofer & Allgäuer-Hackl, 2018, p. 249). Cross-linguistic interaction, a concept broader than cross-linguistic influence (Sharwood Smith & Kellerman, 1986), integrates cognitive effects of transfer as examined in the Interdependence Hypothesis by Cummins (e.g., 1991) arguing that L1 knowledge plays a central role in L2 acquisition in that concepts developed in the L1 would positively transfer during the process of L2 development. The M(ultilingualism)-factor develops as an emergent

property of the multilingual system. It comprises a set of skills and abilities in multilingual speakers and has a priming effect in L3 and Ln learning (Herdina & Jessner, 2002; Jessner & Allgäuer-Hackl, 2020). The core component of the M-factor is multilingual awareness which consists of meta- and cross-linguistic awareness and has a catalytic effect in multilingual learning and use.

#### **2.2.4.2. Metalinguistic awareness**

As the key element of the M-factor, metalinguistic awareness (MLA) can be defined as an individual's ability to focus on linguistic form and to switch focus between form and meaning (Jessner, 2014). Individuals who are metalinguistically aware would mull over the linguistic nature of a particular message and attend to and reflect on the structural features of the language. They would be able to “categorize words into parts of speech; switch focus between form, function, and meaning; and explain why a word has a particular function” (Jessner, 2008, p. 277). When language learners are asked to discuss the use of particular words or to explain the pertinence of an argument, the development of metalinguistic awareness is promoted (El Euch & Huot, 2015). Hence, to be metalinguistically aware is to know how to deal with and solve certain types of problems that require certain cognitive and linguistic skills (Malakoff, 1992).

MLA is a metacognitive ability that develops with further language learning (Török & Jessner, 2017). It is a subcomponent of metacognition and a meta-emergent property in bi- and multilinguals as described from a dynamic systems and complexity theory perspective in the Dynamic Model of Multilingualism (Herdina & Jessner, 2002). MLA refers to the ability to abstractly think about language and consequently manipulate languages (Jessner, 2006; Jessner & Allgäuer-Hackl, 2020). It contributes to the development of linguistic, cognitive, and metacognitive abilities as well as literacy skills (Jessner, 2015). It influences further language learning as it has a catalytic accelerating effect in the successful acquisition of additional foreign languages (Jessner, 2006, 2014; Kemp, 2001).

A substantial body of research studies has ascribed a crucial role to the higher level of MLA as an elemental contributing factor to multilingual learning and multiple language use (e.g., Jessner, 2006, 2014). It has been advocated that bi- and multilinguals are more privileged than monolinguals when learning an additional foreign language, as they develop a heightened level of language awareness that allows them to reflect upon the structural features of languages objectively (Jessner, 2006). General findings (e.g., Jessner, 2014; Kemp, 2001; Thomas, 1988; Woll, 2019) have proven that metalinguistic awareness plays a fundamental

role in successful additional language learning, resulting in a faster acquisition process. These studies report on multilinguals' higher level of metalinguistic awareness and therefore prove multilingual learners' advanced perception and understanding of metalanguage. Multilinguals are proven to have a heightened perception of explicit language features and a good knowledge of the organization of their language systems (Jessner, 2006). This knowledge of systemic processes facilitates the analytic skills used to decode a novel language in a more structured system (Jessner, 2006).

#### **2.2.4.3. Crosslinguistic awareness**

Crosslinguistic awareness (XLA), according to Cenoz and Jessner (2009, p. 127), is “the learner’s tacit and explicit awareness of the links between their language systems”. The ability of multilinguals to make explicit or implicit use of the connections and interactions between their language systems has been associated with a greater propensity for positive transfer and considered a learning asset facilitating (further) language learning (Apaloo & Cardoso, 2021). Angelovska and Hahn (2014, p. 18) define crosslinguistic awareness as “a mental ability which develops through focusing attention on and reflecting upon language(s) in use and through establishing similarities and differences among the languages in one’s multilingual mind”. This definition implies the interrelatedness of crosslinguistic awareness and metalinguistic awareness as emergent properties in multilingual learners. Crosslinguistic awareness can result in heightened metalinguistic awareness, which in turn facilitates cross-lingual lexical consultations (Mayr, 2021). Möller-Omrani and Sivertsen (2022) posit that any instance of metalinguistic awareness that necessitates language comparison is to fall within the definition of crosslinguistic awareness. In this vein, Angelovska (2018) argues that crosslinguistic awareness can be regarded as a sub-type of metalinguistic awareness.

Cross-linguistic awareness allows L3 learners to utilize all their prior language resources, thereby enabling them to consciously examine morphosyntactic connections among the languages they know (Angelovska, 2018). Similarly, Angelovska and Hahn (2012) concluded that learners’ ability to draw cross-linguistic comparisons when reflecting on L3 syntactic structures promotes overall grammatical awareness. Studies conducted by the DyME (Dynamics of Multilingualism with English) research group at Innsbruck University have explored crosslinguistic interaction and multilingual awareness in multilingual language learners in South Tyrolean and Austrian schools. General findings revealed that employing explicit comparisons, contrasting different languages at one’s disposal, and raising learners’ awareness of the similarities and differences between their native and/or foreign languages

can be an effective strategy to enhance learners' metalinguistic and cross-linguistic awareness (Jessner & Allgäuer-Hackl, 2020). This approach helps learners develop a deeper understanding of the structural and functional aspects of languages. Through reflecting on and using these connections and overlaps between the various language systems, learners can transfer knowledge and skills across languages, leading to increased proficiency in the individual languages (Hofer, 2015).

### **2.3. Metalinguistic awareness and multiple language learning and use**

MLA researchers have indicated that speakers who use their metalinguistic abilities to gain insights into the given target language based on crosslinguistic similarities and differences can easily decode new structures, including syntactic and semantic constraints of that particular language (e.g., Peyer et al., 2010; Singleton & Aronin, 2007). Multilinguals usually display an expanded and deepened language awareness and tend to use the full array of their multilingual resources when learning or using a language (Singleton & Aronin, 2007). Multiple studies suggest that MLA plays an important role in language learning, not only because it helps learners understand the nature and value of language but also because it can (a) make one's mother tongue explicit and intuitive, (b) improve language skills, (c) enhance the effectiveness of communication in the mother tongue or a foreign language, (d) promote better relationships between different ethnic groups, and (e) help students handle linguistic disadvantages and prejudices (Anderson et al., 1997). Cenoz and Todeva (2009, p. 278) point out that "multilinguals get many 'free rides' when learning additional languages as their prior linguistic knowledge helps on all levels of language". Cenoz (2013) has shown that the prior linguistic knowledge acquired by multilinguals is shared by simultaneous bilinguals, as the linguistic background of both bi- and multilinguals help them develop an innate awareness of various sentence structures. Researchers investigating foreign language acquisition have stated that bi- and multilinguals are better language learners than monolinguals and that multilinguals use more learning strategies and exhibit greater cognitive versatility than both bilinguals and monolinguals. This suggests that learning novel languages is facilitated by a rich and diverse linguistic background (Cenoz, 2013; Nation and McLaughlin, 1986).

As it refers to the understanding of language as a structured system which can be analyzed (Huang, 2016), metalinguistic awareness allows language users to reflect on the underlying structures, rules, and functions of language and to apply logic with language (Ter Kuile et al., 2011). Prior studies on metalinguistic awareness over the past 40 years predominantly focus on its relationship with bilingualism and second language learning (Huang, 2016; Jessner,

2019). Many have posited that bilinguals exhibit more metalinguistic awareness compared to their monolingual peers, which explains their superior performance across different language tasks (Cromdal, 1999; Mohanty & Babu, 1983; Reder et al., 2013). In a study conducted by Galambos and Goldin-Meadow (1990) exploring the effect of simultaneous bilingualism on metalinguistic awareness using a grammaticality judgement test, results showed that the bilingual experience expedites the transition from a content-based to a form-based approach to language, therefore awakening bilinguals' awareness of the structural contents of their languages. Bialystok et al., (2005) evidenced that bilingual children are better able to establish phonological concepts, exhibit more flexible thinking, and show more cognitive development than their monolingual peers. These findings align with the interpretation of other research (e.g., Beceren, 2010; Izadi & Yarahmadzahi, 2020; Ransdell et al., 2006; Thomas, 1988) affirming that bilinguals develop metalinguistic awareness to a higher degree compared to monolinguals, which allows them to easily analyze, manipulate, and learn grammatical structures of novel languages. Multilinguals are also proven to display an expanded and deepened language awareness (Singleton & Aronin, 2007) and to have a good knowledge of the organization of their language systems (Jessner, 2006), often surpassing that of bilinguals (Cenoz & Jessner, 2009). With the considerable growing interest in multilingualism and multiple language learning, i.e., third, fourth, or nth language learning for which the term TLA or third language acquisition is used, over the past 25 years (Hufeisen & Jessner, 2019), recent research has been investigating the processes of L3 versus L2 learning. In fact, bilingualism and SLA differ from trilingualism and TLA in that L3 learners develop a distinct metasystem that is influenced by a bilingual norm (Jessner, 2014), but qualitatively different than the metasystem inherent in SLA (Jessner et al., 2016).

Psycholinguistic research into the domain of TLA has focused on the multilingual individual and the individual processes of learning and using multiple languages (Hufeisen & Jessner, 2019). Researchers have, for instance, investigated multilingual development in trilinguals as well as multilinguals learning their nth language, multilingual production, tri-/multilingual competence, and the cognitive advantages of trilingualism. Over the last years, psycholinguistic research on multiple language learning has included metalinguistic awareness and cross-linguistic influence. In a multilingual system, all languages interact and influence one another resulting in “processes and products such as transfer of linguistic units, transfer of L2 language learning strategies into L3 learning, or language loss of the L2 due to the recent learning of the L3” (Hufeisen & Jessner, 2019, p. 72). Furthermore, by virtue of

their rich linguistic repertoire, multilinguals develop a heightened level of metalinguistic awareness, granting them a strategic advantage in additional language learning.

#### **2.4. Crosslinguistic interaction (CLIN) in third language acquisition**

CLIN in the sense of crosslinguistic influence (CLI) between the manifold languages in TLA has long been documented in SLA research which traditionally viewed transfer phenomena as influenced by the mother tongue only (Bono, 2011). Odlin (1989) suggested that equating transfer and L1 influence is a “convenient fiction” that tended to overlook the complex nature of multiple language learning and failed to capture the whole picture for multilingual learners. Nonetheless, in a multilingual system, the concept of crosslinguistic interaction extends beyond sole interactions between the L1 and L2 to include interactions between the L2 and L3 as well as between the L1 and L3 (Hufeisen & Jessner, 2019), implying a multidirectional interplay between all languages in a multilingual system. According to Herdina and Jessner (2002, p. 61, in Jessner et al., 2016), “crosslinguistic interaction suggests an extension of the concept of crosslinguistic influence (CLI) as the commonly used concept in language learning studies”. Crosslinguistic influence plays a fundamental role in the acquisition and mastery of third or additional languages. As learners navigate through their different language systems, they draw upon their prior linguistic knowledge and abilities, which results in a myriad of phenomena and processes including transfer of L2 learning strategies in L3 learning, transfer of L2 units, and the production of interlanguage forms (Murphy, 2003). For instance, a native speaker of English with L2 French and L3 German says “*Sie haben Quellen la bas*” (they have springs there), merging both German and French in a syntactically correct utterance, or “*Tu as mein Fax bekommen*” (did you get my Fax?), maintaining correct German grammar but inadvertently using the French personal pronoun and auxiliary (Selinker & Baumgartner-Cohen, 1995). This expansion of transfer possibilities underscores the intricate nature of multilingual acquisition compared to SLA where the L1’s influence on L2 development has been extensively researched. This reasoning can, thus, highlight how learning an L3 can counteract L1 or L2 maintenance, and as a consequence, result in language attrition (Jessner, 2008). In fact, language attrition, or, in some cases, loss tends to be more evident in multilingual rather than in bilingual contexts. Due to the recency of L3 learning and use (Hammarberg, 2001) and, perhaps, its dominance in subsequent stages (Jessner, 2008), alongside the limitation of L1 and/ or L2 resources, maintenance of the previously learnt languages might be jeopardized. Building upon prior research findings in conjunction with novel data collected from adults and children to examine the acquisition of relative clauses in

L3 English, L2 Russian, and L1 Kazakh, Flynn et al. (2004) aimed at capturing the role of L1 in the development of subsequent language learning. A cumulative enhancement model for language acquisition has been proposed postulating that language is accumulative in that prior languages can be neutral or can enhance L3 acquisition. It was suggested that transfer of specific properties from L1 and/ or L2 is determined by the similarities and differences of these properties vis-à-vis the target language L3 (Fernández-Berkes & Flynn, 2021; Flynn et al., 2004). It was also argued that the learner's L1 does not have a privileged role in subsequent language acquisition as other languages concur in influencing L3 or Ln development. Ergo, in an L3 learning context, as in the case of migration, the L2 and/ or L3 might impede L1 maintenance (Hufeisen & Jessner, 2019).

## **2.5. MLA in CLIN**

When researchers discuss awareness, they do not only refer to one's awareness of/ in a single language, but also to the relationship between the different language systems in a multilingual's mind. This dynamic interplay between metalinguistic awareness and crosslinguistic interaction underscores the key variables that contribute to the M-factor (Jessner et al., 2016). According to James (1996, p. 139), knowledge of the relationship between all languages in a learner's mind "can be held the procedural level of *performance*, (being manifest in [Mother Tongue] interference on [Foreign Language] use), or at the cognitive level of *intuition*, in which case we talk of *Cross-linguistic Intuition* (XLI). Or knowledge can be held at the explicit (declarative) level of metacognition, which we shall call *Cross-linguistic Awareness* (XLA)". His crosslinguistic approach to language awareness highlights that "the language transfer issue of classical Contrastive analysis becomes a new issue of metalinguistic transfer – and its relationship to cross-linguistic awareness" (James, 1996, p. 143).

Learners express their crosslinguistic awareness through the use of supporter languages (Jessner, 2008). This process involves searching for similarities, which is integral to the metalinguistic thinking occurring during multilingual production, marking the relationship between MLA and CLIN. "Crosslinguistic awareness in multilingual production is described as (a) tacit awareness shown by the use of cognates in the supporter languages (mainly in the use of combined strategies) and (b) explicit awareness in the case of switches that are introduced by metalanguage" (Jessner, 2018, p. 36). In her introspective study on the use of metalanguage in lexical search during third language production, which highlights the interplay between crosslinguistic interaction and linguistic awareness, Jessner (2005)

demonstrated that metalinguistic knowledge and the awareness of this knowledge as expressed in multilingual metalanguage (i.e., the way multilinguals talk about and reflect on their languages as expressed through metalinguistic questions and comments) can influence multilingual processing and learning. As shown in the think-aloud-protocols (TAPs), all instances of switches accompanied by metalanguage highlight learners' tendency to use their supporter languages in the retrieval of the target language item, as in the following examples, thus indicating their crosslinguistic awareness:

- *I want to explain you ... such as the* (Italian) *com'è che si dice* [how do you say this?] *elaborating ... patient?* (Italian) *com'è frequentatore?* (German) *Besucher?* [visitors], *people that frequent ...*
- This was an incentive, I don't know if this word here, 'incentive', exists in English, but I'll risk again. I tried to translate it from Italian incentive and perhaps it exists. This is an, it means, in Italian *incentivo* means it encouraged me, it gave me a new reason to go on and to workharder. This is an incentive to [pause] improve my English.  
(Jessner, 2005, p. 64)

In the same vein, in her study on crosslinguistic lexical influence from L2 English on L3 Italian in spontaneous written production, Graus (2014, as cited in Jessner et al., 2016) posited that with an increased number of switches accompanied by metalanguage highlighting crosslinguistic awareness, more occurrences of positive crosslinguistic influence (CLI) might be observed. Based on the analysis of the TAPs, most instances marking positive CLI occurred alongside metalanguage:

- (...) *und ich schreibe molto delizioso weil delizioso denke ich dass das schon das richtige Wort ist delizioso weil in Englisch ist es auch delicious ähm [=? un dessert] era molto delizioso (...)* [and I'll write *molto delizioso* because I think *delizioso* is the right word *delizioso* because in English it is also *delicious* ähm [=? un dessert] *era molto delizioso*].  
(Graus, 2014, p. 121, as cited in Jessner et al., 2016, p. 207)

These findings reveal a close relationship between crosslinguistic and metalinguistic awareness which are the two core constituents of multilingual awareness. As “the single most distinguishing features of multilingual systems”, MLA and XLA are the prime reason for multilinguals' distinctive approach to language learning (Hofer & Jessner, 2019, p. 2). Linguists such as Angelovska and Hahn (2014) and Mayr (2021) highlight the interconnectedness of both components and the role they play in effective multiple language

learning and use. In this view, Jessner, Megens, and Graus (2016) defined crosslinguistic awareness as the awareness of the interaction between the different languages in a multilingual's mind, while metalinguistic awareness builds on this by enabling objectification and reflection on these interactions possible, fostering conscious language use. This dynamic exerts influence on the organization of the multilingual mental lexicon (Jessner, 2006). These levels of awareness influence how individual languages are activated and managed during multilingual production, thereby shaping the mental processes involved. James (1996), in the same vein, emphasizes that understanding both the mother tongue (MT) and foreign languages (FL) objectively, first, by recognizing their immanent systemicity, and second, by relating them to each other, develops one's metacognitive understanding of each. Such cognitive engagement highlights the interconnected nature of MLA and XLA, showing how these two components mutually reinforce each other in developing one's linguistic metacognitions in each language.

In line with James' (1996) emphasis on understanding both the mother tongue and foreign languages through an objective lens to foster metacognitive understanding, Hasselgård (2018) found that students generally acknowledge that recognizing similarities and differences between languages is useful in second-language learning. This metacognitive knowledge helps both learners and teachers benefit from positive transfer, while identifying areas susceptible to negative transfer. Learners in Hasselgård's (2018) study seemed to agree that awareness of crosslinguistic similarities offers a shortcut for novice learners but as proficiency increases, awareness of differences becomes essential "to avoid the pitfalls of false friends and other 'mistakes related to negative transfer'" (p. 113). In Hasselgård's (2018) small-scale investigation on whether awareness of the similarities and differences between L1 Norwegian and L2 English facilitates English learning and teaching, one of the students who drew on their metalinguistic knowledge to compare both languages stated that "English and Norwegian are quite similar languages because both are Germanic. Many of the words are therefore fairly alike. The syntax is also closely related (SVO) with a few exceptions like the Norwegian V2 rule" (p. 112). This comment highlights the significance of meta- and cross-linguistic awareness in learning a new language. However, Gutiérrez (2013) posits that students may not always verbalize their underlying metalinguistic knowledge, either due to their lack of adequate resources or because they assume their peers possess similar knowledge. Findings from a later study (Gutiérrez, 2016) showed that awareness of grammatical rules and linguistic features, i.e., analyzed knowledge, played a more significant

role in language learning than metalanguage. The use of technical grammatical terminology was then assumed to be of less importance in the language learning process compared to the understanding of grammatical features (Vold, 2018). Nonetheless, prior research indicates that more proficient language users are likely to engage with metalanguage more frequently and that advanced learners tend to focus more on metalinguistic aspects than their intermediate counterparts (Vold, 2018). This emphasizes the complex interplay between meta- and cross-linguistic awareness and proficiency, where deeper levels of analysis become increasingly relevant and articulate as learners' proficiency develops.

## **2.6. Multilingual transfer, language distance, and the (psycho)typological factor**

When researching crosslinguistic interaction (CLIN) and crosslinguistic influence (CLI) phenomena, examining language transfer is ineluctable. Extensive research on language transfer, particularly within the context of third language acquisition, underscores that previously learned languages can be activated during the learning process, to serve as sources for transfer (e.g., Cenoz & Gorter, 2015; Rothman & Cabrelli Amaro, 2010; De Angelis & Jessner, 2012; Lorenz et al., 2021). Research findings have consistently indicated, over the years, that the amount and degree of similarity between languages are core triggers of CLI and crucial factors influencing transfer in a target language.

Language distance and language similarity may have different meanings to different authors (De Angelis, 2019). Some scholars view similarity as being closely related to typology and the actual existent relationship between languages. For instance, French, Italian, and English are Indo-European languages; French and Italian are Romance languages, whereas English belongs to the Germanic language family. Language distance, in this regard, refers to the typological difference between Romance and Germanic languages. Although two languages might be typologically distant, they still can share similar structures and elements as is the case between French and English. Both languages belong to different language families, Romance and Germanic, respectively, and thus are typologically more distant than French and Italian. However, French and English have a substantial overlap in vocabulary due to various historical reasons, such as the Norman conquest and centuries of cultural exchange. Therefore, language similarity does not necessarily indicate typological closeness (De Angelis, 2019).

A third important concept considered as a determining factor in L3 acquisition and a fundamental notion in CLI research is psychotypology, which refers to a learner's personal

perception of language distance. While typology indicates the actual degree of congruence between the linguistic features of different languages, psychotypology refers to the perceived level of congruence that a language learner believes exists between these languages (Wang & Hargis, 2023). Jarvis and Pavlenko (2008) used the terms objective similarity (and difference) and subjective similarity (and difference) to distinguish between typology and psychotypology, respectively. Ringbom (2007) notes that perceived similarity often overlaps with genetic relatedness, and that it is more challenging to establish the former based on objective linguistic criteria. He further elucidates that while the typology of languages is constant, as it is based on particular linguistic elements, psychotypology may fluctuate and change, over time, depending on a learner's exposure, proficiency, and use of the target language. Additionally, typological distance is symmetrical in that the difference between languages A and B would remain precisely the same regardless of the perspective of speakers of language A and speakers of language B (Nelson et al., 2021). In contrast, psychotypological distance can be asymmetrical, i.e., a speaker of language A may perceive language B as more similar to their own than a speaker of B would perceive A, reflecting a mechanism akin to that of language intelligibility (Nelson et al., 2021). This subjectivity introduces individual variability into the learning process (Wang & Hargis, 2023). Hence, psychotypology can be referred to as an individual-specific variable influencing multiple language learning and a decisive factor determining the source and amount of transfer (Athmani & Boukhedimi, 2021).

Typology has, in fact, been stressed as one of the essential prerequisites for CLI and L2-transfer (Bardel & Lindqvist, 2007; Lindqvist, 2015; Ringbom, 2001; Wang & Hargis, 2023). Similarly, De Angelis and Selinker (2001) advocate that the connection between L2 and L3 is more robust than between L1 and L3, particularly when L2 and L3 are typologically similar. Psychotypology, however, might play a more significant role in CLI and language transfer than objective typological similarities. Kellerman (1978) argued that it is the learner's subjective judgment about which elements of one language are transferable to another that often guides CLI, rather than the actual objective similarities or differences between languages. For the first time, in 1978, Kellerman showed that what learners perceive as close or distant between two languages does not necessarily align with what linguists define as typologically close or distant. Judgments of transferability, in other words, are subjective and vary depending on the learner. In his seminal study, often known as the Breken study, Kellerman (1978) explored psychotypology by examining 81 Dutch learners' judgments on

the translatability of idiomatic expressions containing the word *breken* (“to break” in English) into English. Learners rated expressions based on their perception of transferability. For instance, they scored 100% for what they perceived as transparent, universally understandable expressions such as “he broke his leg” and 11% for opaque expressions such as “some workers have broken the strike”. Kellerman proposed that transfer of certain linguistic structures depended on two interacting factors: psychotypology and prototypicality. The first term refers to a learner’s perception of closeness between two languages, while the second indicates the prototypical meaning of a given form i.e., “the less representative of the prototypical meaning a usage of a given form is, the lower its transferability” (Kellerman, 1987, p. 66). Kellerman’s findings were essential in shifting the understanding of language transfer from a solely objective phenomenon to one that encompasses learners’ subjective perceptions. His research posited that transfer is influenced by more than just structural similarity; it is also contingent upon learners’ perception of language similarities and confidence in the transferability of certain elements. In this regard, Ringbom (2002) advocated a theory to explain psychotypological transfer of language, based on form and meaning. He advanced a nuanced distinction between three different levels at which transfer occurs: the overall level, the item level, and the system level. The first type relates to a learner’s overall perception of the similarity between their languages, “beginning from a common alphabet and phonemes in common over the division into grammatical categories (case, gender, word classes) to the number of cognates and other lexical similarities” (Ringbom, 2002, p.1). The item transfer refers to a learner’s perception of formal similarity, which might lead to either positive or negative transfer. It involves interlingual identifications made by the learner during L<sub>n</sub> language learning. This forms the foundation for an ensuing assumption of semantic or functional equivalence, referred to as the system transfer, which De Angelis (2007, p. 25) defines as the identification of “an identity of meaning between items, but not necessarily of form”.

Rothman (2011, 2015) discusses psychotypology in the Typological Primacy Model (TPM) which argues that the perceived typological proximity between languages greatly influences the choice of the source language for transfer. Rothman (2011) posits that the perceived closeness between L<sub>3</sub> and either L<sub>1</sub> or L<sub>2</sub> plays an essential role in CLI. Based on the proposed model, learners are more likely to transfer features from the language they perceive to be closest to the L<sub>3</sub> regardless of the order of acquisition, indicating that subjective perceptions of language similarities and differences, rather than objective language distance

alone, are fundamental factors shaping transfer behaviors in multilingual contexts. This outcome contradicts the “L2 status factor” (Bardel & Falk, 2007) which proposes that L2 status exerts a domineering influence in L3 acquisition (Rothman, 2011). While the TPM does not preclude the “L2 status factor” from playing a role in subsequent language learning, it puts forth typological proximity as the primary factor for transfer before the L2 status. Rothman’s (2011) findings also highlight the discrepancies between the Typological Primacy Model and the Cumulative Enhancement Model (Flynn et al., 2004) which suggests that all previously acquired languages can either enhance L3 learning or crucially remain neutral. The TPM is, in fact, in line with the CEM insofar as both models agree that transfer from either the L1 or L2 is possible. However, the TPM predicts that transfer from either L1 or L2 always occurs and is not neutralized when it is not facilitative, and this is generally based on (psycho)typological proximity.

In the same vein, Lindqvist (2015) investigated the role of psychotypology for lexical and grammatical crosslinguistic influence in Swedish learners’ written production in L3 French. By using the typological perceptions questionnaire, Lindqvist (2015) probed into learners’ perceptions of the similarities and differences between L1 Swedish, L2 English, and L3 French. The results showed that learners tended to transfer more from the language they perceived as more similar to the L3. In fact, English, which was perceived as closest to French, emerged as the predominant source of transfer, particularly as far as lexical CLI is concerned. These findings are consistent with those of Singleton and Ó Laoire (2006), who similarly observed that learners relied more heavily on English than on Irish when completing a task in L3 French. Likewise, Anastassiou and Andreou (2017) found that learners tended to transfer more content words from Greek than from Albanian, likely perceiving Greek as typologically closer to English (cf. Eibensteiner, 2019; Fuster & Neuser, 2020). The psychotypology factor, in all these studies, has proven to play a decisive role in both lexical and grammatical transfer. In the same regard, Nelson et al. (2021) explored multilingual learners’ perceptions of phonological proximity with the aim of proposing a visual psychotypological measure. All participants had the same linguistic background, with English always being their L2, but German and Polish either their L1 or L3. The results showed that learners’ perception of language similarity was influenced holistically by cumulative numerous salient features, basically pronunciation and vocabulary, rather than specific structural elements. The English-German pair of languages was generally perceived by L1 Polish and L1 German groups as the closest compared to the Polish-German and Polish-

English pairs, pointing to a correspondence between the psycholinguistic perception of crosslinguistic proximity and a genetic/typological distinction. Furthermore, as far as phonological typology is concerned, the prediction was that English and German should be perceived as more closely related, although Polish and German share a limited number of phonological features. This prediction was partially substantiated, however, as L1 Polish learners viewed Polish-German as significantly closer compared to L1 German learners, partially due to shared phonological features that may have been salient enough for learners to notice and the existence of German loanwords in Polish. Although the study emphasizes the crucial role played by the psychotypology factor in phonological and lexical transfer, it reveals some asymmetry in perceived language distance, suggesting that typology and psychotypology are not always congruent (Nelson et al., 2021). This asymmetry in perception highlights the subjective nature of psychotypology, where the order of acquisition, language learning experience, and cultural experiences might influence learners' judgments of language similarity.

The (psycho)typology factor, as a determining factor in L3 acquisition studies (Nelson et al., 2021), is considered to be of utmost importance in lexis acquisition (Lorenz et al., 2021), syntax processing (Testa, 2020), and multilingual literacy development (Allgäuer-Hackl & Jessner, 2019). This influences the learning process by allowing learners to connect and associate new language forms with the forms they have already acquired (Wang & Hargis, 2023). Psychotypology is generally related to learners' metalinguistic awareness, which enables them to identify whether certain structures in one language are similar to or different from those in another. Forms from languages closely related to the target language are more likely to be activated in the acquisition and use of the new language (Lindqvist, 2015). These interactions between the various language systems exemplify the phenomenon of crosslinguistic influence, which in the context of L3 acquisition, becomes increasingly complex and dynamic as multiple languages come into contact. The presence of three or more languages introduces additional layers of interaction, where linguistic elements from each language may compete, support, or obstruct each other, shaping the learning process in unique distinct ways. This dynamic interaction highlights the intricate challenges and potential benefits of multiple language learning, where each language can contribute to or impede the learning of the target language.

## **2.7. Multilingual awareness in the classroom: multicompetence approach to language learning and teaching**

Drawing on Grosjean's wholistic view of bilingualism, being different than the sum of two monolingual language systems (Grosjean, 1997), Cook (2012) advanced the concept of multicompetence which describes a realistic view of multilingual development than additive monolingualism of multiple languages. Multicompetence draws on the concept of interlanguage, involving the whole mind of the language user, not only their first or second languages. The use of multicompetence approach to learning and teaching languages in the classroom is proven to be related to multilingual learners' development of linguistic and metalinguistic abilities (Jessner et al., 2016). Metalinguistic awareness is believed to be significantly high in experienced learners who "receive extensive formal instruction in their second or third languages" (Jessner et al., 2016, p. 159), as the extensive contact with manifold languages in the classroom fosters learners' MLA and facilitates the acquisition of additional languages (Jessner, 2014; Kemp, 2001). Multilinguals are proven to have a heightened perception of explicit language features and a good knowledge of the organization of their language systems (Jessner, 2006). This knowledge of systemic processes, once fostered in the classroom, facilitates the analytic skills used to decode a novel language in a more structured system (Jessner, 2006). A range of studies suggested that learners can benefit more from multilingual classroom approaches to language teaching than from traditional monolingual approaches, considering the fact that from a DCT and DMM perspective, languages develop through interaction with each other (Cook, 2012; Cummins, 2017). In fact, findings from third language acquisition research reveal that a multicompetence teaching approach can enhance language learning through encouraging meta and cross-linguistic reflections and hence develop students' language-learning strategies (Jessner et al., 2016). Based on a study conducted by Hofer (2015) on Italian-language primary school students, divided into a test group, receiving trilingual instruction (i.e., 50% of the curriculum taught in L1 Italian and 50% in L2 German while having L3 English language classes), and a control group, receiving traditional Italian-medium instruction (i.e., all the subjects taught in Italian except L2 German and L3 English language classes), results showed that the children in the test group outperformed their peers in the control group in the L2 German and L3 English proficiency tests as well as in the metalinguistic abilities test in L1 Italian (Hofer, 2015). Children receiving trilingual instruction showed higher linguistic and metalinguistic abilities and high levels of proficiency in their L2 and L3. From a DMM perspective, the multilingual advantages pointed out in this study can be explained in terms of multilingual learners'

development of special advanced attributes emerged as a result of the complex dynamic interplay of language systems in the mind, supported by a multilingual teaching perspective with a focus on MLA in the classroom (Jessner, et al., 2016). A multicompetence approach to language teaching would indeed allow switches between languages, enabling students to use their multilingual monitor which develops their linguistic, communicative and cognitive abilities (Jessner et al., 2016). Multilingual users hence develop a heightened level of cross-linguistic awareness which allows them to approach and learn languages differently and more efficiently.

Research from European countries shows that multilingual teachers, speaking at least three languages, tend to demonstrate higher metalinguistic awareness than bilingual teachers (Otwinowska, 2014). Nonetheless, these teachers often lack the strategies necessary for applying this awareness and effectively integrating this knowledge in the language learning classroom (Otwinowska 2014). A similar tendency emerges in the Norwegian context as many L3 teachers feel uncertain about the way to approach the core subject area of language learning in the curriculum, which encompasses metalinguistic awareness and other types of metacognitive competence including self-assessment and critical use of digital tools (Vold, 2018). A questionnaire study conducted by Haukås (2012, as cited in Haukås, 2018) investigating Norwegian upper secondary school language teachers' perceived importance of reflection in language learning revealed that in most classrooms, students are not given the opportunity to develop their language learning awareness. The key elements of metacognition instruction were shown to be missing in Norwegian language learning classes (Haukås, 2018). Additionally, in an interview study conducted on 12 L3 language teachers to study their practices and beliefs regarding multilingual approaches to language teaching, Haukås (2016) reported that during the interviews, teachers stated that students were rarely given the chance to activate prior linguistic knowledge, reflect on the similarities and differences between their languages, or to look for transfer opportunities. Although the teachers had a positive attitude towards enhancing students' meta- and crosslinguistic awareness through encouraging them to draw on and become aware of their prior language knowledge, they appeared to have limited knowledge on how to implement a multilingual teaching approach in their language classrooms. Similarly, Heimark's (2013, as cited in Vold, 2018) research which was based on 85 Norwegian lower secondary L3 teachers concomitant with observational studies and interviews showed that teachers seldom reflected on a meta-perspective on language learning. Their reflections were more commonly centered on other aspects of the curriculum, including

communicative skills and cultural content knowledge. In the same vein, Vold (2017) examined emerging and experienced Norwegian L3 teachers' perceived competence for teaching different components of the L3 school subject. The findings indicated that teachers felt insecure and least confident in teaching the language learning awareness component. In fact, they felt most uncertain about the subcomponent of metalinguistic awareness (Vold, 2018). A significant body of research points to the lack of plurilingual training in teacher education to explain why multilingual teachers tend to ignore learners' linguistic backgrounds and fail to incorporate crosslinguistic comparison activities into their teaching practices (Otwinowska, 2014). Such activities, which could significantly raise learners' metalinguistic awareness and enhance their understanding of similarities and differences between their different languages, are often absent from classroom strategies. Vold (2018) suggests that introducing crosslinguistic comparison activities during teacher training, including for instance the use of tools like machine translation, could help equip teachers with the necessary knowledge on how to apply a multilingual teaching approach in their language classes. By equipping teachers with practical methods for promoting metalinguistic awareness and facilitating crosslinguistic awareness, teacher training programs could foster more effective integration of students' prior learnt languages into the novel language learning process.

## **2.8. Measuring metalinguistic awareness as a metacognitive process**

### **2.8.1. Measuring metalinguistic awareness: methods and insights**

Research to date has drawn on a wide variety of tests and measures when operationalizing metalinguistic awareness (Roehr-Brackin, 2024). Given that it is a psychological state, its measurement among multilingual learners can be challenging (Spechtenhauser & Jessner, 2024). Few tests have been designed to measure learners' metalinguistic awareness. Among the most comprehensive tests designed in this framework is Pinto test batteries TAM (Test di abilità metalinguistiche), known in English as MAT (metalinguistic awareness test), which were originally developed the 1990s. These three MAT tests target three age groups; children, adolescents, and adults, and are referred to as MAT-1, MAT-2 and MAT-3, respectively. MAT-2 covers multiple linguistic aspects namely Comprehension (metasemantic tasks), Synonymy (metasemantic tasks), Acceptability (metagrammatical tasks), Ambiguity (metasemantic and metagrammatical tasks), Grammatical function (metagrammatical tasks), and Phonemic segmentation (metaphonological tasks), whereas MAT-3 targets comprehension (metasemantic tasks), acceptability (metagrammatical tasks) and figurative language (metasemantic tasks). Pinto test batteries have been translated from the original Italian tests

into English, Spanish, French, German, Portuguese, Russian, and Farsi to be used at the international level.

Other relevant research includes Roehr's (2008) investigation of metalinguistic knowledge and language ability in advanced university-level L1 English learners of L2 German. Two specific measures were used to operationalize metalinguistic knowledge. First, learners were tasked with identifying, correcting, and explaining errors in paraphrases of short written L2 passages, a method designed to gauge their ability to apply grammatical knowledge and provide analytical explanations of the selected L2 features. Second, their language-analytic ability was assessed, through measuring their familiarity with German grammatical categories. In a later research, Falk, Lindqvist, and Bardel (2015) measured metalinguistic awareness of speakers of L1 Swedish using a test containing seven questions on Swedish grammar, designed to assess varying levels of explicit metalinguistic knowledge. Examples of such questions include "Explain where the adjective is placed in relation to its noun" and "How is past participle created for verbs belonging to group 1" (Falk et al., 2015, p. 232). This study is particularly notable as the authors hypothesized that learners who possess greater metalinguistic knowledge in L1 will transfer from their L1, instead of their L2, in the initial state of L3 learning. By measuring participants' metalinguistic knowledge in L1 Swedish, the researchers sought to determine whether those with higher scores would rely more on their L1 than on foreign languages at their disposal when learning an unfamiliar L3 Dutch. To control for potential influences, all 40 participants had studied English, had no previous knowledge of German at all, and had to have prior knowledge of at least one Romance language as the target structure (color adjective placement) in Romance languages is different than that of Germanic languages. The findings revealed that participants with higher levels of L1 metalinguistic knowledge were more likely to experience CLI from their native language when acquiring L3 Dutch, whereas those who had low metalinguistic knowledge favored transfer from their Romance L2. This suggests that metalinguistic abilities may significantly influence the degree and source of linguistic transfer during the learning of an additional language. In this regard, Bardel & Sánchez (2017) argue that metalinguistic abilities may govern transfer, as it can play a cardinal role in whether and by how much a learner transfers from previously acquired or learnt languages in L<sub>n</sub> learning.

Kemp's (2001) dissertation provides a comprehensive exploration of metalinguistic awareness, incorporating both known and unknown language assessments. While her study is often included among the known-language measures, it also introduced a range of innovative

tasks designed to elicit metalinguistic awareness through unknown-language scenarios. One task involved participants attempting to learn artificial grammar under both implicit and explicit conditions. This task aimed to gauge participants' ability to learn systematic patterns of letters devoid of semantic content, i.e., learning form without meaning. This approach was meant to offer insights into participants' ability to detect and apply abstract linguistic rules. Participants were also required to transliterate/ translate a passage written in Middle Egyptian, a script entirely unknown to them, into English. Kemp (2001) designed this so-called Literacy Test to evaluate learners' capacity to decode an unfamiliar writing system and deduce meaning through logical and linguistic inference. Furthermore, participants underwent training in Basque, a previously unknown foreign language, through three 20-minute sessions over at least two weeks. Following the training, they had to complete a 15-minute written test and an oral proficiency interview conducted by a native Basque speaker, the scores of which were combined to create a composite measure of language learning attainment, the study's primary dependent variable. Notably, the Basque written test included a metalinguistic subtask in which participants were asked whether they had been using any linguistic rules to answer previous questions, if so to specify the rules, and if not to reflect on potential rule formation. This task was analyzed as an additional measure of metalinguistic awareness, highlighting participants' ability to articulate and apply explicit linguistic knowledge. The findings revealed that metalinguistic awareness accounted for attainment in the unknown L3. Multilinguals' explicit metalinguistic awareness contributed to language learning over and above language experience particularly when the Basque rule knowledge test was included in the set of metalinguistic variables (Kemp, 2001).

Inspired by Kemp's (2001) innovative metalinguistic awareness tests, Travers' (2024) created the Metalinguistic Awareness Questionnaire (MAQ) which would allow for evidence of metalinguistic awareness to surface, following the Llama\_F grammatical inferencing test. Travers (2024) opted for a traditional language aptitude test to provide the desired type of exposure to an unfamiliar language system, which would then enable evidence of MLA to emerge through retrospective written protocols. Participants would be presented with the answers they gave on the original Llama\_F test and instructed to give a written explanation of the reasoning behind their responses. Specifically, upon finishing the 20-question aptitude test, participants proceeded directly to the MAQ which presented them with variations on the following type of prompt: "For Question 1 you answered 'eket-arap-sa' (instead of 'eket-arap). Why did you think 'eket-arap-sa' was a better choice?" (Travers, 2024, p. 100). The

question was always displayed alongside the original image from the corresponding Llama\_F test item, though there was no indication of whether their answer was correct. Participants were provided unlimited time to type their explanations into a text box. This approach aimed to capture participants' thought processes, shedding light on the metalinguistic strategies they utilized during the aptitude test and offering deeper insights into their awareness when navigating an unfamiliar linguistic system.

It's clear that a wide array of methods and strategies has been employed to measure metalinguistic awareness, from focusing on known languages to exploring unfamiliar linguistic systems, reflecting its complexity as a metacognitive process. Alongside the traditional commonly used grammaticality judgment tasks, where learners identify and correct errors, and language-analytic tasks, which assess their ability to analyze and explain linguistic phenomena across languages, translation tasks from unknown to known languages and language comparison tests have started to be implemented to measure learners' meta- and crosslinguistic awareness as they apply knowledge of one language to another. A promising and innovative approach to assess these metacognitive abilities is the decoding of an unknown language, which could provide deeper insights into metalinguistic and crosslinguistic awareness. This method involves presenting learners with texts or data in an unfamiliar language and requiring them to use their existing linguistic background to deduce meaning, identify patterns, or hypothesize grammatical rules. This method would usually be followed by or combined with retrospective questionnaires, interviews, or think-aloud protocols which can be utilized to gather qualitative data on learners' reflective understanding of language learning processes.

### **2.8.2. Decoding an unfamiliar language system: the role of metalinguistic abilities and prior linguistic knowledge**

Metalinguistic awareness enables individuals to employ logic and reasoning with language. For instance, learners at this stage can reason that a word frequently appearing in a story and starting with a capital letter likely denotes the main character (Ter Kuile et al., 2011). Metalinguistic awareness correlates with a greater ability to resolve linguistic ambiguities and to decide "on deeper meanings or intentions from words choices or paralinguistic cues" (Edwards & Kirkpatrick, 1999, p. 314). In this light, Ter Kuile et al. (2011) suggested that such reasoning with language promotes the comprehension and decoding of texts written in an unknown language. Gibson and Hufeisen (2003) evidenced that knowing more foreign languages, especially those that derive from the same language family such as German and

English, facilitates additional foreign language learning. This can be explained by learners' reflection on their previously learnt languages and use of various conscious and subconscious techniques including transfer strategies to comprehend and produce elements of the target language. In their study, Gibson and Hufeisen (2003) investigated how well multilingual foreign language learners would translate a Swedish text, a language unknown to them, to either English or German. The researchers were also exploring whether the learners were cognizant, post-task, of any lexical or syntactic similarities between Swedish and their previously learnt languages that they leveraged to decipher the unknown language text. The findings revealed that previously acquired languages can help decode a novel language system and that the more languages a person knows, the better they can employ their linguistic knowledge in order to comprehend an unknown language.

Ter Kuile et al. (2011) conducted a similar study that aimed at researching the role of metalinguistic awareness in understanding a text written in an unknown language. An Indonesian reading comprehension test was designed to measure Dutch high school students' metalinguistic awareness in a naturalistic setting in which a person is "[...] comprehending language in a customary fashion while concurrently making decisions about what is being perceived" (Edwards & Kirkpatrick, 1999, p. 315). The participants in Ter Kuile et al.'s study (2009) were either enrolled in a bilingual Dutch-English program or monolingual Dutch classes with no knowledge of Indonesian. The results showed that the bilingual students outperformed their monolingual peers on the Indonesian language test, ergo supporting the notion that bilingual education enhances metalinguistic awareness and thus the ability to decode an unknown language.

More recently, Mieszkowska and Otwinowska-Kasztelanic (2015) examined the mechanisms employed by L1 Polish speakers with advanced level of L2 English and different constellations of L3-Ln (Germanic, Romance, and Mixed) when faced with a relatively difficult Danish text, an unknown language to them. The think-aloud/ verbal protocols indicated that all previously acquired languages were, to different degrees, activated when translating the Danish text. L2 English, however, was the strongest source of transfer. These results suggested several potential, yet not necessarily mutually exclusive, interpretations (Mieszkowska & Otwinowska-Kasztelanic, 2015). First, the participants' high proficiency in English compared to their other languages might have influenced their choice of L2 as the main source of crosslinguistic influence. Secondly, their perception of linguistic distance, i.e., (psycho)typology, might have played a role in "determining the source of linguistic transfer"

(Mieszkowska and Otwinowska-Kasztelanic, 2015, p. 234). The researchers evidenced that participants with lower proficiency in L3-Ln tended to employ fewer strategies and occasionally failed to complete the task, despite their ability to transfer knowledge from languages that are typologically related. On the other hand, participants with a more developed metalinguistic awareness and a higher L3-Ln proficiency were more inclined to search for lexical similarities. Hence, it has been suggested that increased proficiency in L3-Ln languages might enhance learners' metalinguistic awareness. It therefore follows that the development of metalinguistic awareness required to solve challenging language tasks progresses concurrently with the development of L3 proficiency (Mieszkowska & Otwinowska-Kasztelanic, 2015).

Smidfelt and van de Weijer (2019) brought to light several gripping features of how Swedish upper secondary students used their background languages to process Italian, an unknown language, in a translation task. Data from the retrospective questionnaire revealed that students drew not only on lexical but also structural and phonological similarities between the languages involved to decode the new language system. Their comments gave evidence that metalinguistic awareness, as an elemental component of multilingual competence, played a role in translating the Italian text accurately. A more recent study by Spechtenhauser and Jessner (2024) probed into the effects of metalinguistic awareness and prior linguistic learning knowledge and experience (PLLKE) on decoding a novel language unknown to the learners. Metalinguistic awareness in three languages (L1 German, L2 Italian, and L3 English) taught at a German secondary school in South Tyrol was assessed to examine the possible functioning of metalinguistic abilities across languages. The trilingual learners were presented with a French comic strip to capture the mental processes involved in understanding the new language system. The findings revealed that learners benefited from higher metalinguistic awareness levels when decoding. The more metalinguistically aware respondents were able to activate and rely on their prior linguistic knowledge at either the implicit or explicit level, ergo establishing the role of metalinguistic awareness as a catalyst in the decoding process and a driving force in multilingual systems. Spechtenhauser and Jessner (2024) provided evidence that crosslinguistic awareness plays a quintessential role in decoding a new language system, as learners' awareness of the connections between their languages would result in crosslinguistic consultations. PLLKE had also a profound impact on the strategies available to the multilingual respondents.

In summary, the findings from previous research presented in this section reveal that learners' awareness at the meta- and cross-linguistic level of the similarities and overlaps between their languages is fundamental in decoding and comprehending a new and unfamiliar language system. There is evidence that a multilingual learner relies on their background languages, especially the more (psycho)typologically similar ones, when performing a translation or reading comprehension task in an unknown language. However, research on the metalinguistic activities involved in deciphering unknown language texts within the context of reading comprehension tasks remains notably minimal.

## **2.9. Factors related to multilingual awareness**

### **2.9.1. Meta- and crosslinguistic awareness and language proficiency**

The relationship between metalinguistic and crosslinguistic awareness and language proficiency has been investigated in the field of multilingualism and third language acquisition, though findings remain inconclusive. Proficiency, defined as an individual's ability to use a language effectively and accurately for different communicative purposes and in various contexts (Bachman & Palmer, 1996), expressing a range of ideas clearly in both speech and writing (Renandya et al., 2018), can contribute to increased awareness of linguistic structures and their crosslinguistic counterparts. De Houwer (2017) suggests that a heightened level of language awareness might contribute to developing better language proficiency. Similarly, investigating the connection between multilingualism and English language proficiency in terms of the role of metalinguistic awareness in the Ethiopia context, Kassaye et al. (2021) proved that MLA abilities predict L3 proficiency in multilinguals. Awareness of language as a system enables learners to successfully and effectively analyze and internalize new linguistic structures. For instance, explicit awareness of grammatical rules in one language could significantly facilitate the acquisition of similar or contrasting rules in another, thereby expediting the learning process. A number of studies in the field of multilingualism have shown that learners who actively engage in metalinguistic reflection, such as identifying and correcting errors while providing a justification for their response, tend to achieve higher levels of proficiency (cf. Gutiérrez, 2016; Renou, 2001). In a similar vein, crosslinguistic awareness facilitates positive transfer between languages, which can be useful in achieving higher proficiency levels. Recognizing cognates or shared syntactic structures between linguistic systems enables learners to positively transfer knowledge, reducing cognitive load during language acquisition (Sanahuja & Erdocia, 2024). However, crosslinguistic awareness might depend on learners' levels of proficiency in both their first

and additional languages. Low proficiency levels make it more challenging to recognize or use crosslinguistic similarities effectively.

In a study exploring the relationship between explicit knowledge, i.e., analyzed knowledge (learners' awareness of grammatical rules and features) and metalanguage (learners' ability to verbalize rules and talk about language in general), and L2 proficiency, Gutiérrez (2016) found a significant relationship between the two measures of explicit knowledge and language proficiency, although the correlation between analyzed knowledge and language proficiency was stronger than that of knowledge of metalanguage. Similarly, in her research about the relationship between metalinguistic awareness and L2 proficiency in adult learners of French, Renou (2001) reported a significant positive relationship between scores on two grammaticality judgment tests and the French proficiency test for the entire sample. The findings evidenced that learners with higher metalinguistic awareness, as measured by the judgment tests, show higher scores on the French proficiency test. Similarly, Sorace (1985) found a positive correlation between metalinguistic awareness and L2 proficiency. The findings showed that learners with a higher level of metalinguistic knowledge performed better in two oral production tasks than those with lower levels of explicit representations. Elder and Manwaring (2004) arrived at a similar finding. Their study evidenced a strong correlation between metalinguistic knowledge and language proficiency. Learners who received explicit grammar instruction performed better in a Chinese language course compared to the communicative instruction groups, proving the connection between metalinguistic awareness and proficiency. Using grammaticality judgment test, Roehr's (2008) findings also showed strong positive correlations between metalinguistic knowledge scores and L2 proficiency. Nevertheless, when studying a group of freshmen learners of French, Alderson et al. (1997) demonstrate that the relationship between metalinguistic knowledge and language proficiency is elusive and weak. In their study addressing the relationship between metalinguistic knowledge and language proficiency, university French L2 learners' scores on metalinguistic awareness tasks did not correlate with their scores at French A-level exams. These findings suggest that metalinguistic knowledge and language proficiency seem to constitute two separate factors of linguistic ability. Hence, no evidence could be gathered to justify promoting metalinguistic awareness in the classroom as a means to improve learners' language proficiency. Similarly, Han and Ellis (1998) and Elder et al. (1997) found weak or no correlations between metalinguistic awareness and L2 proficiency. Additionally, within the framework of foreign language learning, Ghanmi and Navracsics

(2021) arrive at a similar finding in their comparison between beginner and intermediate level learners of Hungarian as an additional foreign language. Their study indicates that learners' level of metalinguistic awareness is not associated with their proficiency level. It is thus not clear how metalinguistic awareness contributes to language proficiency (Gutiérrez, 2012). Hence, further investigation on the relationship between these two variables would contribute to the body of research exploring the same issue in a multilingual context.

The body of L3 studies exploring crosslinguistic awareness in relation to language proficiency remains somewhat limited. In a five-year longitudinal study involving a cohort of 200 Swiss learners of French as an L2 and English as an L3, Pfenninger and Singleton (2016) explored the extent to which learners were aware of CLI phenomena and their ability to exploit crosslinguistic associations during the language learning process. The study findings showed that, even after just 2.5 years of French instruction, learners had achieved a proficiency level sufficient to enable the transfer of French content words and inflections into their L3 learning. This suggests that higher proficiency in an L2 can facilitate positive transfer and crosslinguistic interaction, supporting and expediting the acquisition of an additional language. The authors also concluded that age of onset of L3 learning and background language proficiency can work as mediating factors in the process of foreign language learning. They noted that the discrepancy in proficiency was big enough to have a major influence on the degree of crosslinguistic influence and associations. Lower levels of proficiency were associated with less secure language differentiation, resulting in less effective use of crosslinguistic strategies. Conversely, in a study examining metaphonological awareness in L3 Polish learners based on qualitative and quantitative data, Wrembel (2014) reported no significant differences between proficiency groups ranging from A1 to B2 levels in terms of both metalinguistic and crosslinguistic awareness. The multilingual participants demonstrated a heightened awareness of their own assets including expanded phonetic repertoires, strong crosslinguistic awareness, and specific language learning strategies, which immensely contribute to the acquisition of additional languages. However, Wrembel (2014) suggested that one possible limitation of the study was that the proficiency levels of the two subgroups tested were not significantly divergent to generate noticeable differences in their degrees of metalinguistic and crosslinguistic awareness. Similarly, Angelovska (2018) investigated crosslinguistic awareness of adult L3 learners of English with a focus on metalinguistic reflections and proficiency levels. Her study findings showed that instances of crosslinguistic awareness, metalinguistic awareness, and self-repair attempts were existent

across all proficiency levels ranging from A2 to C1, which supports the notion that meta- and crosslinguistic thinking appear at lower L3 proficiency levels in like manner. Another longitudinal study by Koda and Miller (2018) examining crosslinguistic interaction in L2 word meaning inference demonstrated that L1 Japanese learners of English as a foreign language used crosslinguistic associations to infer word meanings in L2, thereby enhancing vocabulary acquisition and reading development. The authors suggested that reading in an L2 involves a number of different mechanisms and languages working in unison to construct meaning from text in “this multi-componential system” (Koda & Miller, 2018, p. 307). This longitudinal study illustrates the complex crosslinguistic interactions that occur between the different languages of one’s repertoire with increased proficiency in the L2 further enhancing learners’ ability to exploit crosslinguistic associations. This iterative relationship between language proficiency and crosslinguistic awareness underlines the importance of encouraging bi- and multilingual learners to consciously engage in linguistic comparisons, which can significantly promote their overall language competence.

### **2.9.2. Prior language proficiency and decoding an unfamiliar language system**

The ability to decode an unfamiliar language system can be significantly influenced by the proficiency of the different languages of one’s repertoire. Proficiency in previously acquired languages equips learners with cognitive and linguistic tools that can be utilized to analyze and decipher new linguistic patterns. Proficient speakers of one or more languages are often better at identifying patterns and drawing connections between the known and unknown language systems. In this vein, Mieszkowska and Otwinowska-Kasztelanic (2015) investigated the mechanisms employed by multilingual L1 Polish speakers when decoding an unfamiliar language, Danish. The authors examined which background languages would be activated and used as the source language for crosslinguistic influences and how individual differences, particularly language constellations and proficiency level in the previously acquired languages, would influence the process of decoding the Danish text. A group of 40 Polish advanced users of L2 English with different constellations of L3-Ln (Germanic, Romance, and Mixed) were presented with a relatively difficult Danish text to orally translate into English and subsequently give a commentary on the translation process. The findings indicated that proficiency in L3-Ln played a major role, together with cumulative language experience, in the decoding process as it was crucial in enhancing the inferencing strategies. Mieszkowska and Otwinowska-Kasztelanic (2015) also concluded that typological proximity of languages was only helpful when proficiency in L3-Ln was high enough. Although L2

English proved to be the main source of transfer, both positive and negative, at the lexical level, the Mixed and Romance groups which were more proficient in L3-Ln performed better at inferencing than the Germanic group which exhibited lower proficiency levels. It was thus advocated that greater proficiency in L3-Ln may enhance learners' metalinguistic awareness, boosting their confidence and contributing to their overall success in the inferencing task. The authors also suggested that the metalinguistic awareness necessary to address challenging language tasks develops alongside the process of gaining proficiency in L3-Ln.

Swarte et al. (2015) investigated the role of non-native language knowledge in decoding an unknown but related language, Danish, in a study including Dutch native speakers (L1) with different levels of proficiency in German as a non-native language. The researchers additionally explored whether participants with a high proficiency level in German would correctly translate more Danish words that have a cognate in German than Danish words that have a cognate in Dutch. The participants were required to translate Danish words, a language unknown to them. The experiment focused on stimulus words that were either cognates, i.e. words sharing semantic, orthographic, and phonological properties, with German or with Dutch. The findings revealed that participants with a higher proficiency level of German successfully decoded more Danish stimulus words compared to those with lower German proficiency. Furthermore, those with a lower proficiency level of German were shown to translate more Danish-Dutch cognates correctly than Danish-German cognates, and the reverse holds true for the participants with a higher proficiency level in German, which supports the existence of a foreign language mode when confronted with an unfamiliar language. Similarly, Berthele (2011) examined the role of prior foreign language knowledge in multilingual language activation and inferencing, in a series of methodologically rigorous studies. Multilingual participants were required to infer the meanings of cognate and non-cognate words in an unknown language that was typologically similar to one of their known languages (Germanic or Romance). The tasks included contextualized and decontextualized word lists. The findings underlined the significance of typological proximity between the unfamiliar language and the participants' L1-Ln languages in inferring meaning of cognates and non-cognates. Moreover, Berthele (2011) revealed that the degree of multilinguality plays a cardinal role in correctly inferring word meaning and that multilinguals with high self-rated proficiency in at least two of their background languages outperformed multilinguals without such knowledge. The results evidenced that multilinguals with high proficiency in two languages that are close to the target language outperform all other groups.

Another empirical study that reached similar findings was conducted by Smidfelt (2018) who examined the intercomprehension processes of multilingual Swedish L1 speakers while reading and decoding texts in Italian, an unknown language to them. The data from three Swedish L1 participants having English as L2 and French, Spanish, and German, respectively, as L3 revealed that successful decoding of the Italian texts depended on the proficiency level of the background foreign languages, particularly those typologically closer to Italian, in this case French and Spanish. The participant who spoke German and had no Romance language at his disposal used English as the main source for crosslinguistic consultations, considering that a fair portion of the English lexicon has a Romance origin (Smidfelt, 2018). Interpreting the study findings, Smidfelt (2018) highlighted a minimum level of proficiency in a language that is necessary for it to play a role in the activation and selection process, which aligns with De Bot's (2004, pp. 23-24) assertion that "[...] a - still to be defined - minimal level of proficiency/activation is needed to have words from a language play a role in the selection process, i.e. their default level of activation should be high enough to make them competitive". In other words, for a language to contribute meaningfully to decoding or inferring meaning in an unfamiliar language, its activation level must meet a threshold that allows it to compete with other known languages effectively.

### **2.9.3. Metalinguistic awareness and language motivation and attitude**

Metalinguistic awareness, as the ability to reflect on, analyze, and manipulate the structural and functional elements of language, plays a cardinal role in multiple language learning. While the cognitive advantages of metalinguistic abilities have long been recognized, the relationship between MLA and affective factors involved in the learning process, such as language motivation, has not been thoroughly studied. Motivation, often viewed as a key characteristic that can drive and determine language learning success, is closely connected to learners' emotional and cognitive engagement with language. Metalinguistic, and even crosslinguistic, awareness might promote motivation by fostering a sense of competence or achievement, enabling learners to identify patterns and connections across the languages of their repertoire and bolstering their confidence in addressing and overcoming linguistic challenges. Conversely, motivation itself can expedite the development of metalinguistic abilities, as learners who are intrinsically motivated are more likely to engage eminently in language analysis and reflective learning processes, eventually leading to a successful language learning experience.

Research on the relationship of metalinguistic awareness with motivation, although scarce, has yielded positive results regarding the relationship between both constructs. A study conducted by Amjadiparvar and Zarrin (2019) aiming at examining the relationship between EFL learners' level of language awareness, language motivation, and achievement demonstrated an existing positive and significant correlation between all variables. The study involved 120 adult male and female EFL learners from various language institutes in Kurdistan province, who completed a language awareness and a language learning motivation questionnaire. The findings revealed a strong positive relationship between learners' level of language awareness and motivation. In the same vein, Ghanmi and Navracsics (2021) proved the existence of a strong connection between metalinguistic awareness and language motivation in a study involving a group of bi- and multilingual adult learners of Hungarian as an additional foreign language. The findings showed that any increase in motivation was accompanied by an increase in metalinguistic awareness.

Takahashi (2005) reached a similar finding underscoring the positive and significant relationship between metalinguistic awareness and motivation. The study explored the relationship of Japanese EFL learners' pragmalinguistic awareness with both motivation and proficiency. Eighty Japanese university students took part in the research. They were first requested to complete a motivation questionnaire alongside a proficiency test. Subsequently, they took part in a treatment session that involved two different input situations; the "violin" situation where the requester asked her neighbor to stop her daughter from playing violin at night and the "questionnaire" situation where the requester asked her neighbor to fill out a questionnaire as soon as possible. Both role-plays were made by English native speakers (NS) and Japanese learners of English (NNS). Participants were then asked to compare the NS and NNS requesters' English in both situations. Finally, learners' awareness of the target pragmalinguistic features was measured using a retrospective awareness questionnaire administered promptly after the treatment session. The results showed that learners' pragmalinguistic awareness was positively and strongly correlated with their motivation, in particular, intrinsic motivation. Takahashi (2005) concluded that motivation is related to learners' awareness of pragmalinguistic features and is definitely a crucial manifold cognitive construct, which is closely related to attention and awareness in processing L2 input. Her findings indicated that intrinsically motivated English learners showed great interest in the English language and in learning activities to gain language skills for more successful L2 communication. She thus assumed that learners with great motivational orientation pay much

attention to pragmalinguistic forms as they consider them very important in successfully learning the target language.

A study conducted by Tateyama (2001) on implicit and explicit teaching of pragmatic routines indicates that motivation and language achievement are significantly related to metalinguistic awareness. The study tested 27 male and female students studying Japanese at the University of Hawaii. All participants were native speakers of English except for one Chinese and one Korean student. Students were asked to fill out a background questionnaire that included items related to their motivation before taking part in four treatment sessions in which they were discussing the uses and functions of the Japanese expression “sumimasen”, used for apologizing, expressing gratitude, and getting attention. Finally, they were asked to participate in role-plays with Japanese native speakers, in which the Japanese routine formula “sumimasen” had to be produced. The results showed that highly motivated Japanese foreign language learners outperformed those who were less motivated in the role-plays and were more successful in choosing the formula “sumimasen” in the right situation. Tateyama (2001) thus suggested that motivation was a crucial factor significantly affecting learners’ pragmatic awareness and performance in the treatment sessions. Recognizing the connection between metalinguistic awareness and motivation may enable educators to develop instructional strategies that not only focus on linguistic competence but also support the emotional and motivational aspects of language learning.

## **2.10. Language motivation as a factor affecting language learning**

Language motivation has long been recognized as a core factor in second and foreign language learning. Motivation, broadly defined as the impetus behind goal-directed behavior, influences language learning effort, persistence, and achievement (Nagle, 2021). Csizér (2017, p. 428) views motivation as “a key ingredient to successful classroom learning”. Within the field of SLA, motivation is regarded as a strong predictor of language learning success and task achievement (Dörnyei, 2019). It is a vital aspect of the language learning experience that works as a central driving force, shaping learners’ choices, engagement, persistence, and overall success in acquiring a second or additional language (Dörnyei & Ushioda, 2021). Keller (1983, p. 389) defines motivation as “the choices people make as to what experiences or goals they will approach or avoid and the degree of effort they will exert in this respect”. This definition underscores the core role of motivation as a dynamic process and an inner force that drives action. The process of language learning entails sustaining effort and investment over time, particularly in the face of challenges and setbacks. Motivation

might influence learning strategies, dedication to practice, and readiness to seize chances in using the target language. Williams and Burden (1997, p. 23) define motivation as “a state of cognitive and emotional arousal, which leads to a conscious decision to act, and which gives rise to a period of sustained intellectual and/or physical effort in order to attain a previously set goal (or goals)”. Without sufficient motivation, even the most gifted learners are unlikely to persevere long enough to reach fluency in a language (Dörnyei, 2010). Although a state of cognitive and emotional arousal is an eminent driving force in successful language learning, Csizér (2020) argues that an L2 motivation definition needs to consider the learning setting as teacher-student and student-student interactions play a pivotal role. She posits that motivation is an interactional process that subsumes effort and persistence to learn an additional language. Dörnyei and Ryan (2015) explain that the primary aim of research on L2 motivation is to explain student learning. Work in L2 motivation has experienced a notable publication surge and a changing landscape (Boo et al., 2015). Additionally, as trilingual education is becoming a common experience, especially in Europe, research on L3 motivation has begun to expand, given that L3 learning involves a greater degree of complexity and the motivational systems of a learner’s various languages need to be viewed as cognitively interconnected (Henry, 2015, 2017). Henry (2020) argues that L3 motivation should be understood and studied from a complex dynamic system theory perspective due to influence of prior language learning experiences and therefore the existent dynamic interactions between the different motivational systems. Currently, much significant work is being produced as researchers across the globe are investigating various motivational issues, including group dynamics, teacher motivation, motivational strategies, demotivation, and complexity theory, among others (Mahmoodi & Yousefi, 2021).

Dörnyei and Ryan (2015) developed a stage framework for a better understanding of the historical development of L2 motivation theory. The first stage which was referred to as the social psychological stage emerging in the late 1950s and developing till the 1990s was highly influenced by Gardner’s integrative- instrumental motivation dichotomy and the importance of learners’ attitudes towards the target language and its speakers. By the early 1990s, scholars shifted focus to the classroom-learning situation, extrinsic and intrinsic motivations, and the contextual and environmental influences. Research also critiqued the Gardnerian integrative motivation that Dörnyei and his colleagues (Csizér & Dörnyei 2005; Dörnyei et al., 2006) described as being “not so much related to any actual, or metaphorical, *integration* into an L2 community as to some more basic *identification process* within the individual’s *self-concept*”

(Dörnyei & Csizér 2002, p. 456). During this cognitive-situated stage, researchers explored cognitive and behavioral factors such as goal setting, self-efficacy, emotion and personality, teacher motivation, and task-specific motivation, reflecting broader trends in educational psychology. As this period's research centered mainly on classroom processes and with making motivation research teacher-friendly, Al-Hoorie (2017) called this phase the educational period. The current stage in language motivation theory is a socio-dynamic one that Dörnyei and Ryan (2015) referred to as the process-focused stage. Starting from the turn of the millennium, research has centered on “motivational change/dynamism, self-regulation, imagined (possible) selves and emergence of individual motivation in sociocultural contexts” (Oxford, 2020, p. 185). This paradigmatic shift is signaled by Dörnyei's (2005, 2009) L2 Motivational Self System (L2MSS), which offers a new conceptualization of language learning motivation that “has its roots in theories of self and identity in mainstream psychology, and the ways in which aspects of the self-concept contribute in the directing of behavior” (Csizér, 2020, p.73). Dörnyei (2005) expounds that a student's learning behavior, defined by the effort they are willing to exert and their persistence in language learning, is influenced by three distinct constructs: the ideal L2 self, the ought-to L2 self, and the L2 learning experience. The ideal L2 self represents the learner's ability to envision themselves as competent users of the target language, acting as a powerful motivator deeply rooted in personal aspirations. The ought-to L2 self reflects the external pressure and expectations that learners think they need to comply with. Dörnyei (2019) describes the ideal and ought-to L2 selves as future self-guides. The third component of the model, the L2 learning experience, involves executive motives related to the immediate learning environment, and attitudes towards classroom processes (Dörnyei, 2005, 2009). Although the model was subject to criticism (Csizér, 2020; Henry & Liu, 2024), its relevance and viability have been proven in a vast body of empirical studies. Beyond the L2 motivation context, the L2MSS was also applied within L3 motivation research (e.g., Henry, 2011; Kojima & Fukui, 2024) to understand the nature of learners' motivation in trilingual learning environments. In Sweden, Henry (2011) found that studying two foreign languages simultaneously often led to competing L2 and L3 self-concepts. In Thailand, Siridetkoon and Dewaele's (2017) study showed that the development of the L2 and L3 ideal selves and ought-to selves was intertwined and that some students would temporarily suspend motivation in one language to maintain growth and motivation in the other. Interestingly, some scholars uncovered that L2 English motivation can negatively influence L3 motivation due to its dominant status as a lingua franca (Csizér & Illés, 2020; Henry, 2011). The ideal L2 English self often appears to

be stronger than the L3 ideal self unless students invoke counteracting resources to maintain L3 motivation. In some cases, while L2 English motivation can threaten L3 motivation, L2 English can encourage the learning of other foreign languages; learners in here would develop unique motivational systems that are dynamic and complex (Siridetkoon & Dewaele, 2017). Hence, studying the differences in L2 English motivation and L3 French motivation in the present study's context within the L2MSS framework offers an opportunity to explore learners' motivational dispositions with regard to two foreign languages with differing global status.

### **2.10.1. The beginnings of the L2 Motivational Self System Model**

The beginnings of Dörnyei's L2MSS can be traced back to his collaboration with Clément and Csizér at the turn of the millennium, in influential large-scale longitudinal research on L2 motivation and attitudes in Hungarian students, as outlined in Dörnyei, Csizér, and Németh (2006). This study draws on Gardner's (2001) integrative motivation framework defined as the learner's desire to integrate into the target language community, while broadening the scope of the theory and reinterpreting central concepts to address changing sociocultural and global contexts. It followed a repeated cross-sectional design consisting of three national surveys spanning a period of more than a decade (1993, 1999, 2004). A pivotal aspect of Dörnyei, Csizér, and Németh's (2006) research examining language attitudes and motivation among 13,391 Hungarian teenage language learners was the development of a comprehensive Language Disposition Questionnaire designed to capture the complex factors influencing learners' motivation in a rapidly globalizing world. The questionnaire was instrumental in reshaping the understanding of L2 motivation, as it moved beyond Gardner's (1985, 2010) socio-educational model to involve imminent constructs reflective of globalization and self-concept based on theoretical strands in personality psychology (Liu, 2024).

### **2.10.2. The Language Disposition Questionnaire (Dörnyei et al., 2006)**

The Language Disposition Questionnaire (Dörnyei et al., 2006) consists of 37 items, in a grid format, twenty-one of which target learners' motivation and attitudes towards five different foreign languages (English, German, French, Italian and Russian), nine items test learners' general views regarding their learning milieu and linguistic self-confidence, irrespective of particular languages or L2 communities, and seven items ask about various aspects of students' background. The questionnaire conceptualizes seven main motivational/attitudinal components, as explained below (Dörnyei & Csizér, 2002), that were later used to explain the L2MSS:

- *Integrativeness* refers to the desire to integrate in and connect with the target language community as well as to become similar to the L2 speakers.
- *Instrumentality* reflects the perceived pragmatic benefits of gaining L2 proficiency.
- *Attitudes towards L2 speakers/ community* concerns the learner's attitudes towards contact with L2 speakers and traveling to their country.
- *Vitality of L2 community* concerns the learner's perceived status and wealth of the L2 community.
- *Cultural interest* (or indirect contact) refers to the learner's appreciation of the L2 cultural products associated with the L2 and conveyed by the media (e.g. movies, TV programs, magazines, and pop music).
- *Milieu* relates to the perception of the importance of foreign languages in the learner's immediate environment such as significant others including family and friends.
- *Linguistic self-confidence* refers to the learner's confidence level in the learning and mastery of L2.

Structural equation modeling (SEM) of the various language data collected during the three phases of the longitudinal study consistently revealed a strong relationship between key motivational variables, namely integrativeness, instrumentality, and attitudes toward L2 speakers/community, and two critical criterion measures: language choice and intended learning effort. Figure 1 presents the schematic representation of the final structural model which had excellent goodness of fit of indices (Dörnyei et al., 2006). One of the main findings was the prominent role of integrativeness in the L2 motivation construct inasmuch as Dörnyei and Csizér (2002, p. 453) concluded that integrativeness “explained almost as much of the variance of the criterion measures as all the motivation components together”. For instance, during the first wave in 1993, the correlation between integrativeness and learners' intended effort and language choice to learn English was 0.63 and 0.43 respectively, while the combined correlation of all motivational components was only slightly higher at 0.68 and 0.44. The relationship of instrumentality and attitudes toward L2 speakers/community with intended effort and language choice was also as significant. This consistency was evident across the three waves of the study, demonstrating that integrativeness, instrumentality, and attitudes toward L2 speakers/community were the strongest predictors of learners' motivation across the different examined languages and time periods.

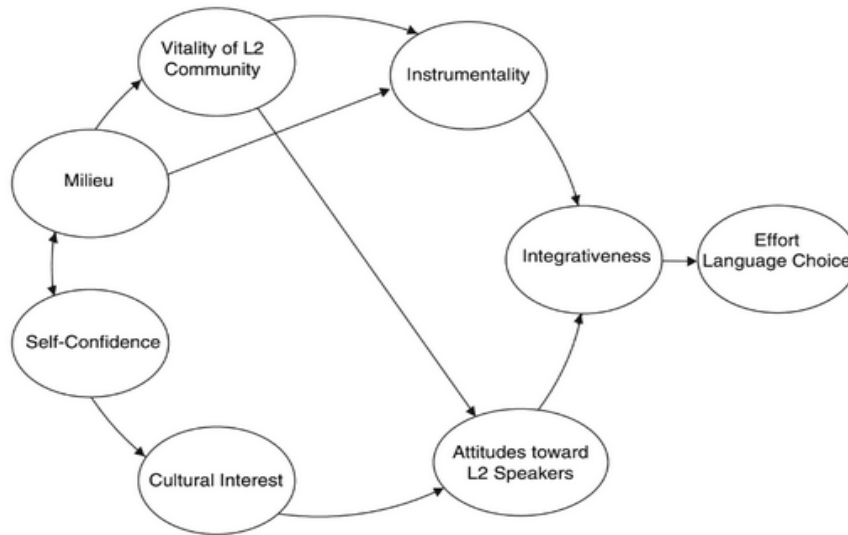


Figure 1. Schematic representation of the structural equation model in Dörnyei et al.'s (2006) study

Further analysis using SEM revealed that integrativeness was determined by two antecedent variables: instrumentality and attitudes toward L2 speakers/community (Dörnyei, 2009). These variables mediated the contribution of all other motivational factors on the criterion measures, i.e., intended effort and language choice, indicating that learners' integrative motivation was shaped by both pragmatic incentives and attitudes towards L2 speakers and communities. This finding supports the notion that learners' ideal selves incorporate both professional success and personal agreeableness, implying that integrativeness is deeply intertwined with self-concept (Taguchi et al., 2009). In his conceptualization of the L2 Motivational Self System, Dörnyei (2005, 2009) expanded on this realization by reinterpreting integrativeness as an L2-specific facet of the learner's ideal self. In this light, Taguchi, Magid, and Pap (2009, p. 88) reached a conclusion that "integrativeness can be relabelled as the ideal L2 self" in a study testing the L2 Motivational Self System among Japanese, Chinese, and Iranian Learners of English, with the aim of examining the findings from the Hungarian longitudinal study in different contexts so as to verify the generalizability and potency of the system.

Dörnyei's language disposition questionnaire has shown to be a foundational instrument in language motivation research, inspiring a plethora of studies that have adapted its framework to investigate motivational constructs across different contexts and demographics. The questionnaire's flexibility and comprehensiveness have enabled researchers to explore various aspects of motivation and their impact on language learning behavior, demonstrating its continued relevance in the field. The seven motivational/attitudinal dimensions were empirically tested in a number of follow-up studies, providing insight into their adaptability

and applicability across various educational and cultural settings. Kormos and Csizér (2008) tested the seven motivational constructs in Hungarian learners of English as a foreign language. Three distinct learner populations, namely secondary school students, university students, and adult language learners were administered a questionnaire measuring the most important factors in L2 motivation and including new variables to test. Among the variables covered were Dörnyei et al.'s (2006) motivational constructs. The findings revealed that a few components such as linguistic self-confidence, instrumentality, and ethnolinguistic vitality (vitality of L2 community) had to be excluded since very few items loaded onto them. The researchers were surprised that instrumentality, a robust construct in motivational studies, did not load adequately as expected. Similarly, Ko-Yin Sung (2013) adopted Dörnyei et al.'s (2006) Language Disposition Questionnaire to measure L2 motivation in 130 US fourth to ninth graders enrolled in Chinese as a foreign language classroom. The study identified four motivational constructs: instrumentality-dominant, attitudes towards the L2 speaker/community-dominant, learners' perception of their parents' proficiency in Chinese, and milieu. None of the other factors identified in Dörnyei et al. (2006) were found in this study.

The adoption of Dörnyei's language disposition questionnaire in various investigations highlights its adaptability. Its consistent ability to identify foundational motivational factors and highlight variances across different learner populations demonstrates its importance in capturing the complex nature of L2 learning motivation. Nonetheless, the discrepancies in certain constructs such as instrumentality, the exclusion of such components as linguistic self-confidence and milieu, and the emergence of parents' proficiency as a separate dimension in some studies point to the significance of ongoing empirical research. Using this questionnaire in contemporary educational contexts could yield invaluable insights into the dynamic nature of language motivation, particularly in light of globalization, technological advancements, and shifting sociocultural dynamics. For instance, the rise of digital learning environments and the emergence of English as a universal language may change how students perceive integrativeness, instrumentality, and attitudes toward the L2 speakers and communities. Adapting this instrument in contemporary research would not only support or maintain continuity with previous research but also enable comparative analyses that might reveal patterns and shifts in L2 learning motivation over time.

## **Chapter 3. Research methods**

### **3.1. Introduction**

Following the meticulous treatment throughout the first two chapters of metalinguistic and crosslinguistic awareness from the perspective of the DMM, alongside the factors involved in the development of multilingual awareness and further language learning, this chapter presents the research methodology applied in this study to investigate the meta- and crosslinguistic abilities when decoding a new language system and motivation in trilingual Hungarian high school students enrolled in a French bilingual school. A detailed description of the settings of the research and the participants involved is expounded. The subsequent sections elucidate the materials used along with an evaluation of the reliability and validity of the tests implemented. The chapter concludes with a thorough description of the data collection procedure, coding criteria, and methods of data analysis.

### **3.2. Research Design**

The present study uses a cross-sectional mixed-method approach that aims at investigating the metalinguistic abilities employed by Hungarian trilingual learners in decoding an unfamiliar language system, as well as the factors that might be related to the development of these skills. This approach combines quantitative and qualitative methods, which can provide an overarching framework for addressing the research questions and allow generalizations (Hua & David, 2008), thereby contributing valuable insights into the existing literature. The relationship of metalinguistic abilities, as unraveled through the understanding of the unknown language, with L2/L3 proficiency and the different motivational and attitudinal constructs would be best explored through collecting data from multiple subjects at one point in time since cross-sectional studies are used to explore relationships and identify correlations between different variables (Hua & David, 2008). While the statistical analysis of the quantitative data would further strengthen the conclusions drawn from the cross-sectional approach, by identifying patterns and relationships across the studied variables (Hua & David, 2008), the qualitative data would examine learners' behavior in the course of decoding the unknown language (Friedman, 2012). The mixed-method approach provides a larger frame for understanding. Quantitative data offers generalizability and statistical rigor, while qualitative data adds depth to our understating of cognitive processes. By blending methods, the study ensures a comprehensive exploration of and a valid answer to the research questions

(Cameron & Larsen-Freeman, 2007), allowing for robust conclusions about the variables under investigation.

### **3.3. Setting and population**

The study was conducted during the academic year 2022-2023 in three Hungarian public high schools in three different vibrant regions in Hungary: Vetési Albert Gimnázium, Veszprém; Leówey Klára Gimnázium, Pécs; and SZTE Gyakorló Gimnázium, Szeged. These schools are recognized for their emphasis on academic excellence and their French bilingual programs, which meet the quality of French bilingual education worldwide. The French bilingual program begins in grade 9 and continues until grade 12. Students receive intensive French language instruction where several subjects including history, geography, civilization, and mathematics are taught in French. This approach ensures that students not only develop high proficiency in French but also acquire subject-specific knowledge through the medium of the language.

Other foreign language courses, including English, are also offered within the French bilingual program. The schools prioritize the teaching of other foreign languages with English usually being a core component of the curriculum due to its universality and utility. Hungarian students usually begin learning their first foreign language, often English, at the age of 8-9 (3rd-4th grade). When they reach grade 9, they start learning their second foreign language. If English is not their first foreign language, it is often chosen as their second. The participants who took part in this study have French and English at their disposal. This multilingual focus demonstrates the program directors' commitment to promoting multilingualism by providing students with the needed skills to navigate and prosper in an increasingly interconnected and globalized world. By fostering proficiency in French and equipping students with the linguistic and cultural knowledge related to the language while offering English language courses, the French bilingual program aims to provide students with the competence required to engage with diverse communities, access international academic opportunities, and compete in global job markets. This population was purposefully selected as it reflects a trilingual educational system that focuses on L1 Hungarian, L2 English, and to a greater degree L3 French, which aligns with the aims of the study. These students' linguistic profile renders them ideal for investigating meta- and crosslinguistic abilities within the Dynamic Model of Multilingualism, as they are exposed to and often required to navigate multiple language systems for academic and communicative purposes. Additionally, the existence of both French and English in the curriculum would allow for a more detailed examination and

comprehensive understanding of the interplay between language learning motivation and multilingual awareness in decoding an unfamiliar language. Focusing on developing students' French language and immersing them in the French culture, the schools participate in exchange programs that allow Hungarian students to spend some time in French schools, hosted by French families, giving them an opportunity to experience first-hand, authentic cultural interactions and practice their language skills in a natural setting. Through the bilingual program, these schools strive to enhance learners' practical language use, cultural understanding, and intercultural communication skills, with the aim of cultivating globally minded individuals who can engage confidently in cross-cultural communication.

### **3.4. Participants**

In the current study, 10th, 11th, and 12th graders (N=139) were invited to participate in the study through purposive sampling. They predominantly learned French as L3 starting from the 9th grade as part of the French bilingual program and English as L2 from primary school. Five participants were excluded from the study because they reported having learnt Italian, the unfamiliar language system used in this research. Hence, the final number of participants is 134 (104 female). During the first year of the program (grade 9), the participants received an intensive training in French with the aim of enabling them to start content learning in the foreign language from grade 10 onwards. From grade 10 to grade 12, students receive 5 to 6 hours of French instruction and 3 hours of English language classes per week. The age of participants ranges between 16 and 19 years (M=17.67). 37 participants are in grade 10, 35 are in grade 11, and 62 are in grade 12.

Although being exposed more to French in their schools, 76.1% of the participants reported that they were more dominant in English than French. Only 18% of them stated that they were more dominant in French (Fig. 2). On a daily basis, participants are more exposed to Hungarian (M=68.75), followed by English (M=18.18) then French (M=17.00). Although the difference in the mean exposure to English and French seems minimal, the majority of students expressed a stronger inclination and motivation towards learning and using English.

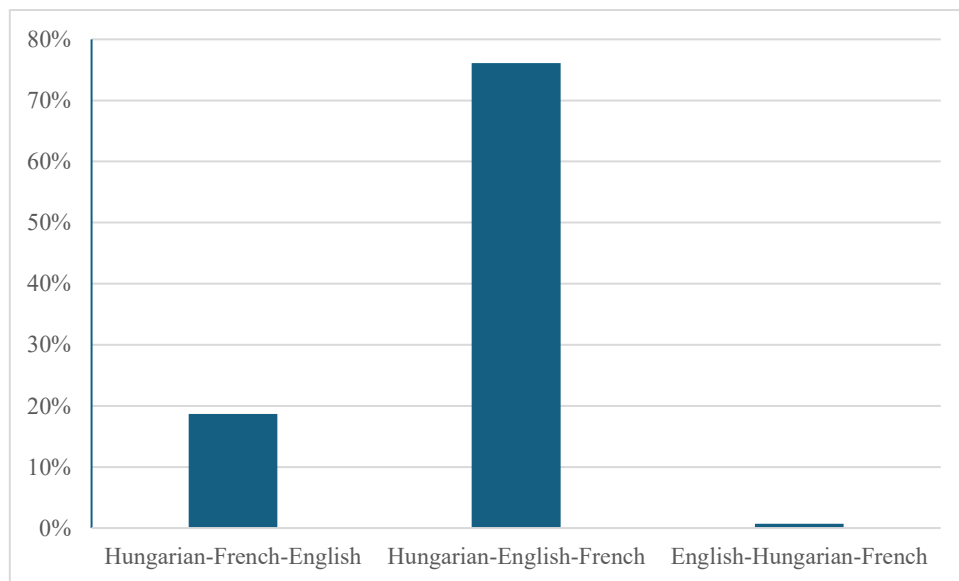


Figure 2. Learners' language dominance

They reported using English more frequently than French in various contexts, such as with family and friends as well as when watching TV and listening to music. Moreover, 26.8% of respondents stated that they identified with the English culture to varying degrees, while 24.6% identified with the French culture. All students expressed a degree of identification with their L1 Hungarian culture, choosing values between 2 and 10 on a scale of 0-10. A few students reported identifying with other cultures including Japanese, Spanish, German, Croatian, Polish, and Korean. Table 1 summarizes the descriptive statistics for the participants' cultural identification.

Table 1. Descriptive statistics of students' cultural identification

		Identification			
		with the Hungarian culture	with the English culture	with the French culture	with another culture
N	Valid	128	128	128	128
	Missing	6	6	6	6
Mean		9,3906	1,4141	1,2969	1,1406
Variance		2,130	6,780	5,848	6,201
Range		8,00	10,00	8,00	10,00
Minimum		2,00	,00	,00	,00
Maximum		10,00	10,00	8,00	10,00

Additionally, participants were asked to self-report their proficiency levels in their second and third languages (in order of acquisition), predominantly English and French respectively.

These self-reported data offer a clearer picture of their multilingual profiles and their perceived competence in each language. Self-reported proficiency levels across different languages skills are presented in table 2. These data offer valuable context for analyzing the participants' language learning experiences and motivation.

Table 2. Self-reported proficiency in different language skills across grades

Grade	Language	Skills	Mean	Minimum	Maximum	Std. Deviation
10	French	Reading	6.189	1	10	2.503
		Speaking	5.621	2	9	1.934
		Understanding spoken language	5.959	1	10	2.180
	English	Reading	8.377	4	10	1.554
		Speaking	7.459	4	10	1.608
		Understanding spoken language	8.527	5	10	1.130
11	French	Reading	7.281	2	10	1.835
		Speaking	6.343	1	10	2.041
		Understanding spoken language	7.062	3	10	1.899
	English	Reading	8.437	5	10	1.366
		Speaking	7.625	2	10	2.012
		Understanding spoken language	8.562	5	10	1.479
12	French	Reading	7.678	3	10	1.536
		Speaking	6.423	3	9	1.289
		Understanding spoken language	7.245	3	10	1.418
	English	Reading	8.830	3	10	1.301
		Speaking	8.135	3	10	1.332
		Understanding spoken language	9.033	3	10	1.245

### 3.5. Materials

Six instruments were used in this study: Language Experience and Proficiency Questionnaire (LEAP-Q), language motivation/ attitude questionnaire, French proficiency test, English proficiency test, Italian reading comprehension test, and a retrospective questionnaire.

#### 3.5.1. Language Experience and Proficiency Questionnaire (LEAP-Q)

The Hungarian version of the Language Experience and Proficiency Questionnaire (LEAP-Q), first developed in English by Marian, Blumenfeld, and Kaushanskaya (2007) to assess language profiles of bilinguals and multilinguals, was used to collect self-reported background information about the participants. The LEAP-Q is widely recognized as a

validated questionnaire tool that provides comprehensive data about a multitude of language-related aspects such as language dominance, language use, language exposure, and self-reported proficiency in the languages spoken by the participants. To tailor the LEAP-Q for the specific aims of this study, sundry modifications were made. Questions 7 and 8 in the original version were excluded from this study as they were irrelevant, dealing with the highest level of education and immigration experience. Similarly, questions 6 and 7 under each language profile were omitted, as they dealt with learners' perceptions of their accent in their foreign languages, which is considered irrelevant to the focus of the study.

The slightly modified LEAP-Q offered a robust and expansive approach to obtaining essential background data. Participants were asked to provide details about broad measures of language dominance, language exposure, and language preference, alongside specific measures associated with each language: ages of acquisition and ages of attained fluency, length of immersion in different contexts, estimates of proficiency in speaking, reading, and understanding spoken language, ratings of how different contexts contribute to the acquisition of the language, and extent of exposure to the language in various contexts. Participants' degree of identification with the culture of each of their languages also had to be noted. "An 11-point (0–10) Likert scale was used for all the questions requiring estimates of degree and strength, with each point of the scale anchored to a descriptive label" (Kaushanskaya et al., 2020, p. 1). The data gathered not only established the participants' multilingual profiles but also formed a basis for studying the relationship between their language experiences and performance in the tasks. The use of the Hungarian version of the LEAP-Q ensured that participants could report their language histories more comfortably and accurately. The rationale behind adopting the LEAP-Q as an instrument to collect self-reported background information is its validity, reliability, and ability to provide a comprehensive description of bilingual and multilingual participants. Kaushanskaya, Blumenfeld, and Marian (2020) recently stated:

Over the past 10 years, the LEAP-Q has been employed as such a measure across a wide range of academic disciplines, ranging from psycholinguistic studies [...] to neuroimaging and clinical research [...]. [...] the LEAP-Q has become part of the standard battery of background assessments in bilingualism research. To date, the original LEAP-Q article has been cited over 800 times [...]. As the field moves forward, we envision that the LEAP-Q will continue to play a central role in multifaceted examinations of the bilingual experience (p. 4).

### **3.5.2. French Proficiency Test**

A French proficiency test at B2 level, as defined by the Common European Framework of Reference for Languages (CEFR), was designed for this study. The test consists of two sections: a reading comprehension task and a lexical grammatical task containing 7 and 10 multiple-choice questions, respectively.

The first task (reading comprehension) was taken from one of the standardized DELF (Diplôme D'études en Langue Française) exams. DELF is an internationally recognized certification of French language proficiency issued by the French Ministry of Education. It evaluates language proficiency at several CEFR levels (A1 to B2) and is especially designed for non-native speakers of French. The B2 level, commonly referred to as the independent user stage based on CEFR (Kamal et al., 2023), assesses students' comprehension and production of complex language in both familiar and unfamiliar contexts. The DELF B2 exam is widely used for academic and professional purposes, certifying learners' ability to understand abstract topics, engage in spontaneous communicative activity at a speed that does not hinder comprehension, and construct coherent arguments in French. This rendered it an ideal source for the reading comprehension task, ensuring that the text is not only authentic but also fairly challenging for the participants.

The lexical and grammatical items in the second task were taken from the Test de Connaissance du Français (TCF Tout Public), a standardized test of French knowledge developed by the French Ministry of Education, and the Test de Français International (TFI), a standardized test developed and administered by the Educational Testing Service (ETS). Both of these tests are designed to assess French competence in non-native speakers of French for educational, professional, or personal purposes. The lexical and grammatical items selected from these exams tended to assess participants' command of French vocabulary and grammar within authentic and functional contexts, ensuring alignment with the B2 proficiency criteria.

### **3.5.3. English Proficiency Test**

An English proficiency test was developed to assess learners' English language competence at B1-B2 levels, as defined by the Common European Framework of Reference for Languages. The test consists of a reading comprehension section and a grammatical section with 7 and 10 multiple-choice questions, respectively. These tasks were developed to evaluate essential language skills aligned with the study's objectives, ensuring that the test was both effective and relevant for the targeted proficiency levels.

The reading comprehension section has been adapted from the EF Standard English Test (EF SET), a standardized test designed by EF Education First, a global educational company, in accordance with CEFR standards, to measure English proficiency. The EF SET is commonly used to assess English language proficiency in academic and professional contexts. The reading task used in this research includes an engaging email about a birthday party, followed by 7 reading comprehension questions. These questions assess participants' ability to identify key information and understand contextual details in the text. The selected text reflects realistic, authentic language use, which makes it appropriate for evaluating practical reading skills at the B1-B2 levels.

The 10 grammatical items in the second section were based on the curriculum adopted by Hungarian secondary schools for teaching English grammar. This curriculum is designed to guide students through the learning of basic grammatical rules, thereby fostering their understanding of basic language structures, which is essential to reach a B2 level by the end of grade 12. The items in the test include pronouns, comparative structures, conditional sentences, and other key aspects of English grammar. The items were selected from reliable sources, such as the EF SET, and adapted to align with the grammar concepts taught in Hungarian schools. The integration of these specific grammatical elements ensures that the test accurately measures learners' understanding of English language rules required for achieving B2-level proficiency by the end of grade 12.

#### **3.5.4. Italian Reading Comprehension Test**

An A1 level Italian language test has been designed to measure students' ability to decode an unfamiliar language system. Italian has been chosen because it was unfamiliar to the participants, rendering it ideal to reflect their metalinguistic abilities and decoding strategies, and because it belongs to the Indo-European language family which also includes French and English. This connection between Italian and the participants' known languages ensures the existence of some similarities that might offer opportunities for crosslinguistic consultations and transfer. Specifically, Italian and French belong to the Romance languages, and therefore share numerous lexical, structural, and morphological features, while English as a Germanic language, has been influenced by Romance languages, particularly in its vocabulary. Learners' L1 Hungarian, however, belongs to the Finno-Ugric branch of the Uralic languages, which makes it typologically different from learners' L2 and L3.

The decision to use Italian as the unfamiliar language was further motivated by practical factors pertaining to the study's design. Adopting a very typologically distant language, such

as one from the Sino-Tibetan (e.g., Chinese, Burmese), Austronesian (e.g., Filipino, Indonesian), Afroasiatic (e.g., Amharic, Arabic, Omoro) families, though could have provided an intriguing contrast, would have necessitated providing participants with introductory basic lessons early on to familiarize them with its completely different phonological, morphological, and syntactic systems. Such planning and preparation would have required a tremendous amount of time and resources that could not be afforded. Furthermore, scheduling lessons during school hours was far-fetched, if not at all feasible, as it would have disrupted regular academic activities.

By choosing Italian, a language that is significantly different from learners' L1 Hungarian yet typologically closer to their L2 and L3, the study maintains a balance. This choice allows for an authentic investigation of learners' ability to identify patterns, notice linguistic similarities, and employ metalinguistic strategies, eliminating the logistical challenges of preparatory lessons and the confounding variable of prior language exposure. The use of Italian as an unfamiliar language system in the study offers a useful and meaningful lens through which to explore the interplay between learners' prior language knowledge and their decoding abilities.

The Italian test consists of three reading comprehension tasks with multiple-choice questions. The first text consists of 76 words with 4 questions in Italian, focusing on extracting particular information. The task has been adopted from CILS (Certificazione di Italiano come Lingua Straniera – Certificate of Italian as a Foreign Language) A1 standardized exam developed by the University of Siena to measure Italian language skills of non-native speakers of Italian. The text is about a special discount on parking fees offered by the Italian railway company Trenitalia to travelers. The second Italian text consists of 131 words with 6 questions in English. It has been taken from an online platform Lingua, designed to help learners develop various skills in multiple languages. The Italian materials have been developed by professional Italian teachers to provide a solid foundation for learning Italian. The text describes a typical day in the life of 18-year-old Carlo. The third and final text consists of 118 words and is followed by 6 questions in French. The task was taken from Lingua and is a description of Sofia's family. It required participants to understand familial relationships and daily activities. A grammar question was included in each of the second and third tasks, to assess learners' awareness of structural similarities between their languages and ability to identify gendered nouns. The reason for providing the questions in L2 and L3 in the second and third tasks is to ensure that the students' focus remains on decoding the Italian

texts and making educated interpretations about the content rather than understanding the questions themselves.

### **3.5.5. Retrospective Questionnaire**

Unlike other experimental techniques used in previous psycholinguistic research investigating metacognitive operations, the retrospective questionnaire aims to capture the involvement of metalinguistic and crosslinguistic awareness in the decoding process. An advantage of this method is that it provides access to learners' processing of the different Italian texts and not only to the final product (Smidfelt, 2017). It offers insight into learners' thought processes and use of linguistic knowledge as it explores the cognitive strategies and linguistic resources they rely on during the decoding process. The retrospective questionnaire used in this study is based on Gibson and Hufeisen (2003) and was further used by Smidfelt and van de Weijer (2019) to examine multilingual learners' strategies in decoding a novel language system. The questionnaire was slightly adapted to meet the aims of the study and was translated into the participants' L1 Hungarian.

Participants were encouraged to give as many examples as possible of how they could understand the Italian texts in order to gain a deeper insight into the strategic processing methods used to decode an unfamiliar language system. They were invited to elaborate on their strategies and reasoning so as to uncover patterns of metalinguistic and crosslinguistic awareness that influenced their understanding. They were free to answer the questions in any of their languages, which intended to minimize potential linguistic barriers and allow for more authentic and elaborate responses.

### **3.5.6. Language Disposition Questionnaire**

The Language Disposition Questionnaire, originally developed by Dörnyei and Csizér (2002) to explore motivation and attitudes in Hungarian high school students towards sundry foreign languages, was adapted to examine the participants' motivation in learning French and English. Although the original questionnaire includes background questions like demographic details and language choice, only the items related to the motivational constructs are used in this study. The twenty-nine items utilized fall into seven motivational dimensions as defined in Dörnyei and Csizér (2002) and Dörnyei et al. (2006): integrativeness, instrumentality, attitudes toward the L2 speakers/community, Vitality of L2 community, cultural interest, milieu, and linguistic self-confidence. These motivational dimensions are relevant to the research objectives, particularly in exploring participants' motivation towards learning French, the language of instruction in their bilingual program, and English as a global

language and in examining how these motivational, attitudinal dimensions are related to learners' proficiency and metalinguistic abilities as shown through the decoding of the unfamiliar language. Each item of the questionnaire is rated on a five-point Likert scale. The adaptation ensures that the questionnaire remains concise and focused.

The motivation questionnaire used in this study is not only an instrument for measuring participants' motivation and attitude but is also a subject of scrutiny itself. One of the research aims is to investigate whether the items in the adapted questionnaire will load onto the same motivational factors as identified in the original research, especially that a few prior research studies have yielded different factor loadings, to a certain extent, in different contexts. The decision to adapt the language disposition questionnaire was influenced by both theoretical and practical considerations. First, the original questionnaire has served as a solid basis for motivational research and offered a well-established framework for exploring cardinal constructs such as integrativeness, instrumentality, and attitudes toward the target language speakers/community. Second, the question of whether the items would yield comparable factor loadings in this study's context was an important motivating factor behind adapting the questionnaire. Examining these loadings can contribute to the continuing debate on the universality and viability of motivational theories in various linguistic and cultural contexts. Additionally, most of the existing motivation questionnaires that are comprehensive and target fundamental motivational constructs are often extensive, including a substantial number of items (50+ items). This would have been time-consuming for participants and possibly led to response fatigue. Thus, the adapted version of the Language Disposition Questionnaire is concise, contextually appropriate, and focused exclusively on key aspects of language motivation and attitude.

### **3.6. Validity of the materials**

#### **3.6.1. French Proficiency Test**

The combination of the reading comprehension and grammatical lexical tasks aim to provide an impartial assessment of the participants' French reading, lexical, and grammatical skills. In order to preserve a high degree of validity and reflect real-world authentic language use, the test integrates material from highly regarded standardized tests. Using authentic tasks from the DELF, TCF, and TFI ensure that the devised proficiency test adheres to internationally accepted standards, providing an accurate valid measure of the learners' ability to use and comprehend the language. The designed test offers a solid foundation for exploring the relationship between French proficiency and the other key variables in the study. It was

carefully reviewed by the supervisor and researcher to ensure its adherence to CEFR criteria and alignment with the study's objectives. The French teachers at the three high schools confirmed that the test met students' proficiency level, describing it as achievable.

### **3.6.2. English Proficiency Test**

The English proficiency test provides a thorough evaluation of participants' English proficiency in areas aligned with the study's objectives by combining an authentic reading material with a structured grammar exercise. The test ensures a fair assessment of both receptive and grammatical language skills by covering academic language structures and real-world language use. The dual emphasis on reading comprehension and grammar is also in line with the study aim of exploring the connection between proficiency and decoding an unknown language. The test was carefully reviewed by the supervisor and the researcher to ensure its adherence to CEFR criteria and alignment with the study's objectives. While the reading comprehension task reflects a realistic, authentic scenario to enhance validity, the grammar section was developed to match the educational experiences of Hungarian students. This method ensures that the test is not only in line with international standards but also contextually pertinent to the learners, thereby enhancing its reliability.

### **3.6.3. Italian Reading Comprehension Test**

The validity of the Italian test developed for this study is carefully ensured through its design and the use of established, standardized materials. In a prior study, Smidfelt (2019) used a similar method, employing two Italian texts that multilingual L1 Swedish learners needed to infer meaning of as many items as possible from, while in a more recent study, Spechtenhauser and Jessner (2024) used a comic strip in French, a novel language, that aimed to capture trilingual learners' mental activities during the decoding process. Content validity is attained by developing the A1-level test within the widely recognized CEFR standards for language proficiency. The texts are adapted from reliable sources, including the CILS exam developed by the University of Siena and the online teaching platform Lingua.com, both of which are widely viewed as prominent, effective tools in evaluating Italian proficiency. These sources lend credibility to the test's ability to accurately assess learners' reading comprehension and decoding abilities and ensure that the test content is both representative of true-to-life language use and adequate for assessing beginner-level Italian comprehension. The test in the way it is designed measures particular cognitive processes and language skills relevant to the study's objectives. Each task aims at evaluating participants' ability to decipher unknown language structures, recognize patterns, and infer meaning based on previously

acquired languages, to which meta- and crosslinguistic awareness would be needed. The test was reviewed by an Italian native speaker to ensure further linguistic accuracy and authenticity.

#### **3.6.4. Retrospective Questionnaire**

The validity of the retrospective questionnaire lies in its design offering a means to explore cognitive processes in language learning. Retrospective questionnaires can be effective tools for obtaining self-reported data about learners' experiences, thought processes, and perceptions during language tasks. The main advantage of the use of such introspective methods is allowing access to mental processes that are paramount, for example, to language processing and production, and enhancing the richness of the data obtained, as retrospective questionnaires, for instance, would be combined with other research methods (Dörnyei, 2007). Bryfonski (2023) maintains that retrospective methods ensure that the introspective data collection process does not interfere with the tasks participants would have to complete. The questionnaire items used in this study are connected to the research objectives, centering on participants' use of their background knowledge to decipher Italian texts, their perceived difficulty of the tasks, and the potential involvement of other factors such as contextual clues in comprehension. Since the questionnaire was translated into Hungarian, the supervisor and another Hungarian native speaker have reviewed it ensuring clarity and linguistic accuracy.

#### **3.6.5. Language Disposition Questionnaire**

The adapted version of the Language Disposition Questionnaire by Dörnyei and Csizér (2002) was carefully reviewed by the supervisor and the researcher to ensure its suitability for the study's aims. The questionnaire is designed to examine seven fundamental motivational and attitudinal dimensions in language learning and is well-established in the field of second and foreign language acquisition (Dörnyei et al., 2006; Kormos & Csizér, 2008). The 29 items in the questionnaire are directly connected to motivational and attitudinal constructs, excluding items that aimed to collect demographic or personal background information, which are already covered by the LEAP-Q. These constructs have consistently been shown to play a crucial role in language learning motivation and are the genesis for the L2 Motivational Self System (Dörnyei, 2005; Csizér et al., 2025). This study also aims to investigate whether the motivational attitudinal items would load onto the same factors when applied to a different participant group (Hungarian-French bilingual high school students learning English as a foreign language). This approach thus tests the original questionnaire and contributes to

ongoing research on the generalizability and contextual flexibility of motivational components.

### **3.7. Pilot study**

#### **3.7.1. Preliminary pilot study**

To ensure the instruments were appropriate and clear, a preliminary pilot study was carried out prior to the official pilot testing phase. A small group of participants ( $n=5$ ) with similar linguistic backgrounds (Arabic-French bilinguals having learnt English as a foreign language) to those in the main study were administered, online, the French Proficiency Test, the English Proficiency Test, the Italian Reading Comprehension Test, and the Retrospective Questionnaire. The aim of this initial phase was to check whether the tasks, instructions, and questionnaire items were clear, understandable, and relevant to the research objectives. Participants were urged to offer thorough feedback on any ambiguities they encountered with the instruments, including task instructions and question wording.

Based on the participants' feedback, the instruments were deemed appropriate and understandable as initially designed. However, the last question in the retrospective questionnaire was reworded to offer a more precise instruction and promote more thorough answers. According to the participants, the original phrasing of the question was too broad. The revised wording ensured that the question was clearer. The Italian reading comprehension test was perceived as moderately difficult. This aligns with the test's aim of assessing participants' ability to decipher and understand texts in an unfamiliar language, without being unduly simplistic or overly challenging. This balanced level of difficulty intended to keep participants motivated and focused on decoding the Italian texts without overwhelming them.

#### **3.7.2. Official pilot study: Reliability of the tests**

At the beginning of the data collection phase, the Italian Reading Comprehension Test, the French Proficiency Test, and the English Proficiency Test were formally piloted to ensure their reliability. The pilot study was conducted on 10 participants, including the five participants who took part in the preliminary pilot phase. All participants have a similar linguistic background (Arabic-French bilinguals having learnt English as a foreign language) to the participants involved in the present study. Data analysis showed that the tests were comprehensible and reliable. The Cronbach's alpha values were as follows: Italian Reading Comprehension Test,  $\alpha=.80$  ( $SD=3.16$ ); French Proficiency Test,  $\alpha=.82$  ( $SD=3.44$ ); English

Proficiency Test,  $\alpha=.79$  ( $SD=2.96$ ). Since the  $\alpha$  measures were considerably high, all tests had therefore good reliability and were used in the subsequent data collection.

### **3.8. Data collection procedure**

Data collection took place on five different days within a period of three months (2022-2023) during the French language classes and in the presence of the students' French teacher and the researcher. Since Vetési Albert Gimnázium (Veszprém) had the largest number of participants, data collection took place over three separate days. The second school that was visited was Leőwey Klára Gimnázium (Pécs) at which data collection was completed in a single day. Finally, data was gathered at SZTE Gyakorló Gimnázium (Szeged) in one day. On every occasion, the researcher would start by giving a brief verbal explanation, in French, of the objectives of the study and the questionnaires and tests the participants would be completing. The students were also informed in advance that participation in the study was completely voluntary. Participants were given the option of using pseudonyms instead of their real names, if they wished, and were informed that all data would be treated anonymously. Finally, they were instructed to complete the tasks individually.

Participants were first administered the LEAP-Q to gather relevant information and the motivation questionnaire, followed by the French Proficiency Test and the English Proficiency Test. Immediately afterwards, students were asked to decode the Italian texts, a language unfamiliar to them, and then to complete the Retrospective Questionnaire. All tests were administered in written form. The whole procedure took about 50 to 120 minutes. This variation in duration is attributed to the fact that some students preferred spending more time carefully decoding the Italian texts and providing detailed responses to the retrospective questionnaire. Additionally, the participants' differing levels of engagement and desire for accuracy might have also contributed to variation in completion time.

### **3.9. Data analysis and coding criteria**

Quantitative data analysis was based on the French and English proficiency tests and the Italian Reading Comprehension Test. All tests were coded on a binary scale. Zero points were given if the answer was wrong, and one point was given if the answer was correct. As the maximum score is one point for each item, the maximum score that can be achieved is 17 points for both proficiency tests and 16 points for the unfamiliar language test. Additionally, quantitative data were obtained from the language disposition questionnaire to gauge participants' language learning motivation and attitude and the retrospective questionnaire on

the extent to which previous languages helped decode the Italian texts. All scores were statistically analyzed using IBM-SPSS, Excel, and SmartPLS software.

Qualitative data were extracted from the retrospective questionnaire. It was of paramount importance to identify categories that align with the research questions and are theoretically grounded. To this end, Qualitative Content Analysis (QCA) was employed, as suggested by Mayring (2014). QCA emphasizes an integrated view of text or speech and their respective contexts, allowing for “the development of new theories and models, as well as validating existing theories and providing thick descriptions of particular settings or phenomena” (Zhang & Wildemuth, 2009, p.11). This study uses a directed content analysis (Hsieh & Shannon, 2005) of the raw data in which the initial coding is based on relevant research findings or a theory, but new categories may emerge from the data, during data analysis. Three categories were generated based on deductive reasoning based on previous research findings (Smidfelt & van de Weijer, 2019): awareness of phonological similarities, awareness of lexical similarities, and awareness of structural similarities. Moreover, an additional category emerged during the data analysis phase: awareness of typological proximity. As the structuring of the category system through definitions, anchor samples, and encoding rules is central to the Qualitative Content Analysis, a coding agenda was developed to determine the categories involved in the decoding process.

### **3.10. Quality control and ethical considerations**

Throughout the research process, some quality control measures were established to ensure the study’s validity and reliability. Although all tests were adapted from validated instruments, a small sample of students with a similar educational background was pilot tested to ensure the tests’ clarity and accessibility. Feedback from the preliminary pilot phase was implemented to enhance item wording and task instructions and internal consistency was confirmed through reliability analysis following the official pilot study. During the data collection process, all testing sessions were held under standardized conditions to ascertain uniformity. The same instructions and controlled testing environment were provided. Participants were given the option to use pseudonyms when completing the tests and questionnaires and all data were treated anonymously and with strict confidentiality. The data gathered were checked several times to detect missing values and reduce entry errors and were only accessible to the researcher and supervisor.

The design and execution of this research were conducted with strict adherence to ethical standards. After receiving the ethical approval from the University of Pannonia’s Research

Ethical Committee, four Hungarian-French bilingual secondary schools were initially contacted, by the supervisor, in order to obtain their consent to conduct the present study with their students, and three of them agreed to take part in this research. The emails sent to the schools included information about the study's significance, the approximate testing time, and the ethical guidelines that would be adhered to, such as maintaining participant confidentiality and voluntary participation. Following these initial communications, school administrators, language program coordinators, and teachers indicated their intention to take part in the study and provided consent for the research to be conducted at their schools during French language classes. This cooperative approach ensured that everyone involved was fully informed about the research and that the administration of the tests complied with the schools' schedules. Students were also informed that participation in the study was entirely voluntary.

## Chapter 4. Results

### 4.1. Introduction

The present study investigates the involvement of metalinguistic and crosslinguistic abilities in decoding an unfamiliar language system, Italian, in Hungarian-French bilinguals learning English as a foreign language. The techniques used by learners to decipher Italian are also investigated. Additionally, the study explores the connection between L2 and L3 proficiency and the ability to decipher the Italian texts and whether (psycho)typological proximity plays a cardinal role in the process. Additionally, this study uses the motivational, attitudinal constructs existent in the Language Disposition Questionnaire developed by Dörnyei and Csizér as the subject of investigation. One of the research aims is to examine whether the motivational items in the adapted questionnaire would load into the same seven factors as in the original study, i.e., integrativeness, instrumentality, attitudes towards L2 speakers/community, cultural interest, vitality of L2 community, milieu, and linguistic self-confidence. Studying learners' motivations and attitudes towards learning French, the language of instruction in their bilingual program, and English, a globally dominant language, while also exploring the relationship between these motivational factors and metalinguistic abilities is also one of the core objectives of this research. Furthermore, the study examines the extent to which language motivation is related to L2 and L3 proficiency as well as to multilingual awareness.

This chapter presents the results of the research questions delineated in Chapter 1, providing insights into the complex interactions in a multilingual brain and the interplay between linguistic, cognitive, and motivational dimensions in multilingual learners.

### 4.2. LEAP-Q results

#### 4.2.1. Language exposure and dominance

Despite receiving greater exposure to French within their academic environment, the majority of participants indicated that English is their more dominant foreign language (Section 3.3.). They reported using it mostly with friends, and, to a lesser degree, with family. Exposure to the language through various media channels, including TV, video-based platforms, and streaming services, further reinforced its presence and dominance in their everyday lives. In contrast, exposure to French, outside the classroom environment, is less frequent compared to English. The participants still use French with their friends, considerably to a lesser degree

than English, and engage with it in reading; however, the exposure to the language in digital contexts is limited.

**4.2.2. Language preference**

The LEAP-Q results show that most participants feel more comfortable speaking to someone, who speaks all three of their languages, in English compared to French. The most preferred order of preference is Hungarian-English-French, selected by a majority of 59 participants. Hungarian-French-English ranks second, though with significantly fewer selections (15 participants).

Preferences for individual languages or different language order, such as Hungarian (N=10), English (N=5), English-Hungarian-French (N=9), and Hungarian-English (N=7), are also reported, with each receiving modest representation in the responses. Interestingly, preferences for language orders including French-English, French-Hungarian-English, and Hungarian-French are significantly less frequent as shown in Figure 3.

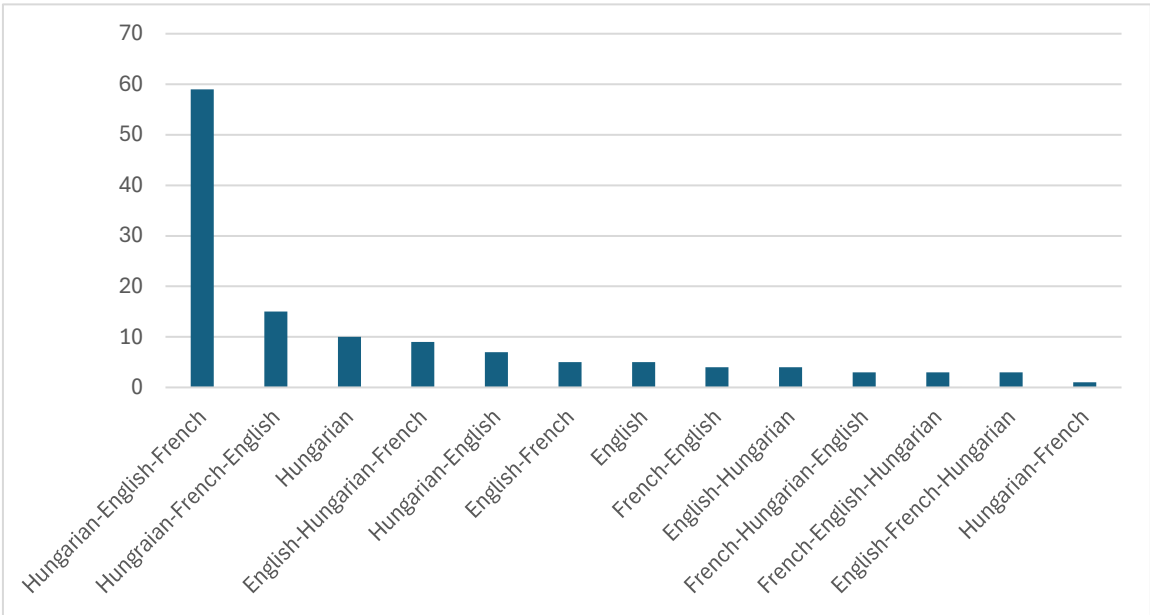


Figure 3. Order of language preference when communicating with a multilingual speaker

Figure 3 indicates a clear preference for initiating communication in Hungarian with an individual speaking all three languages, since it’s the participants’ mother tongue. However, English in particular seems to be a better choice, in such interactions, than French which typically ranks lower in the participants’ order of language preference.

Figure 4 depicts participants’ language preference when reading a text available in all three languages: Hungarian, English, and French. The most selected order of preference is Hungarian-English-French (N=62), reflecting a strong preference for English over French.

Only 15 participants would prefer reading a text in French over English, but again Hungarian would be their first choice.

Altogether, 31 participants reported a preference for reading a text in English first when it is available in all three of their languages. One participant, however, indicated exclusively picking English. Other orders of preference including Hungarian-English, French-English, and Hungarian are much less frequent, with only very few participants selecting these options.

Although Hungarian appears to be the dominant choice overall, figure 4 shows that English, as compared to French, is the preferred reading language for the majority of participants.

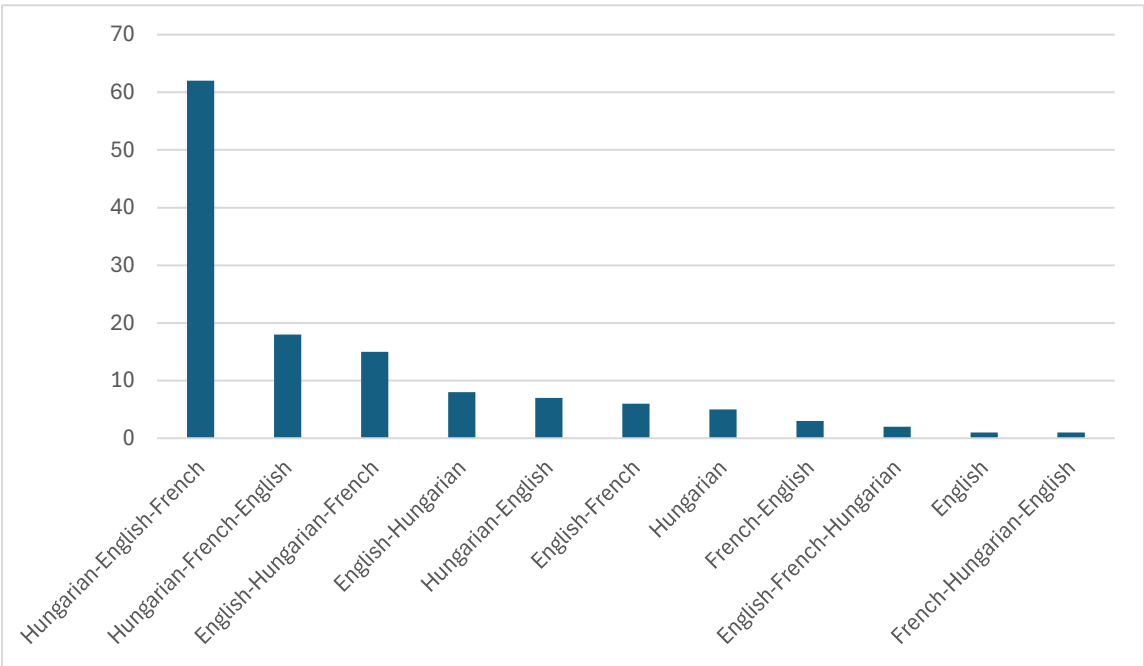


Figure 4. Language preference for reading a text available in Hungarian, English, and French

**4.2.3. Factors contributing to language learning**

**4.2.3.1. Factors contributing to English language learning**

The LEAP-Q results indicate the extent to which various factors contribute to participants’ English language learning. Table 3 presents participants’ self-reported assessments of the relative importance of several factors in their English language learning. The results indicate that watching TV, video-based platforms such as Youtube, social media, and the increasingly popular video-streaming platforms such as Netflix as well as reading are perceived as the most significant contributing factors to English learning. This implies that language development for participants is largely dependent on exposure to English-language media and literacy-based activities. Another important factor that was reported to contribute to language

learning is interacting with friends, underscoring the importance of social communication in English proficiency. Nonetheless, self-instruction and listening to the radio or podcasts are rated as moderately influential, indicating that although some students use autonomous learning strategies, they are not the primary contributors to English language development. Table 3 also shows that English is seldom used in home environments as interacting with family received the lowest mean score for the factors contributing to learning English.

Table 3. Factors contributing to English language learning

		Interacting with friends	Interacting with family	Reading	Language tapes/Self- instruction	Watching TV	Listening to the radio
N	Valid	128	128	128	128	128	128
	Missing	6	6	6	6	6	6
Mean		6.437	3.156	7.648	5.515	7.695	4.687
Minimum		0	0	0	0	0	0
Maximum		10	10	10	10	10	10
Std. Dev.		3.649	3.901	2.816	3.863	3.141	4.050

Table 3 indicates the dominance of media exposure and reading in English language learning and development, while social interactions, mainly with friends, and self-instruction have a major but less dominant influence.

#### 4.2.3.2. Factors contributing to French language learning

Table 4 presents participants' self-reported ratings on the extent to which different factors contribute to their French language learning.

Table 4. Factors contributing to French language learning

		Interacting with friends	Interacting with family	Reading	Language tapes/Self- instruction	Watching TV	Listening to the radio
N	Valid	128	128	128	128	128	128
	Missing	6	6	6	6	6	6
Mean		4.385	1.252	6.283	5.378	4.401	3.322
Minimum		0	0	0	0	0	0
Maximum		10	10	10	10	10	10
Std. Dev.		3.752	2.935	2.847	3.794	3.601	3.810

The mean scores show that reading, according to the participants, is the most contributing factor in acquiring French, followed by self-instruction. This implies that a key factor in

participants' acquisition of the French language is structured learning through reading and autonomous study. Watching TV, video-based platforms, and social media and interacting with friends received moderate ratings, suggesting that audiovisual exposure and peer communication contribute to French learning and development, although they do not appear to be as influential and dominant as in English language learning. Listening to the radio or to podcasts has a lower mean score, suggesting that audio-based learning methods are not as commonly used. Conversely, the least contributing factor to French learning is interacting with family, indicating that French is not frequently spoken in home environments. This is consistent with the findings from English language learning (see Table 3), which shows that Hungarian is still the dominant home language.

### 4.3. French and English Proficiency and Italian tests

All data were screened for skew and kurtosis. The normality of distribution and homogeneity of variance assumptions were checked in each case, according to which parametric and non-parametric tests were conducted. Descriptive statistics for the proficiency and Italian language test are presented in Table 5.

As part of preliminary analyses, students' scores on both French and English proficiency tests are compared. Table 5 shows a higher performance on the English (M=14.59) compared to the French test (M=9.26). Frequency values reveal that only 13.43% of students achieved somewhat a high score between 13 and 17 on the French test, whereas 88.05% of them received 13 to 17 points on the English test. Participants appear to have stronger English skills, which is reflected through their mean scores on the reading comprehension and grammar tasks, both of which are substantially higher than the corresponding French test scores. With regard to the Italian Reading Comprehension test, 51.49% of respondents received a score between 12 and 16 with the majority scoring 12 points, suggesting a moderate success in decoding the Italian texts.

Table 5. Descriptive statistics for proficiency and unknown (Italian) language test

	N	Minimum	Maximum	Mean	Std. Deviation
French Proficiency	134	2.00	17.00	9.26	2.96
Reading task		1.00	7.00	4.97	1.46
Grammar task		.00	10.00	4.29	1.98
English Proficiency	134	1.00	17.00	14.59	2.38
Reading task		1.00	7.00	6.42	.79
Grammar task		.00	10.00	8.20	1.78

Italian language test	134	3.00	16.00	11.39	2,15
Reading task 1		.00	4.00	2.58	.96
Reading task 2		.00	6.00	5.12	1.02
Reading task 3		2.00	6.00	3.67	.96

Among the three reading comprehension tasks, Reading task 2 had the highest mean score, suggesting that participants found this task to be the easiest to complete. Reading task 1 had the lowest mean score, indicating some difficulty in deciphering this particular text. Performance on Reading task 3 was moderate, slightly higher than Reading Task 1 but lower than Reading task 2. These findings suggest that participants' comprehension of the Italian texts may have been influenced by task complexity or textual characteristics.

#### 4.3.1. Decoding the Italian language system and French proficiency

One of the major research aims is to explore the relationship between learners' metalinguistic abilities as shown through the unknown language test and French proficiency. To this end, a non-parametric Spearman's rho correlation was conducted (Table 6).

Table 6. Correlation between Italian test accuracy and French proficiency

		Italian language test	French proficiency
Spearman's rho	Italian language test	Correlation Coefficient	1.00
		Sig. (2-tailed)	.205*
		N	134

\*. Correlation is significant at the 0.05 level (2-tailed)

A close examination of the correlation shows a significant positive relationship between the two variables,  $r = .20$ ,  $p = .01$ . Although the correlation is not robust, increases in learners' French proficiency are accompanied with increases in their ability to decode the unknown language system.

#### 4.3.2. Decoding the Italian language system and English proficiency

Examining the connection between learners' metalinguistic skills as measured through the Italian Reading Comprehension test and English proficiency is one of the aims of the present study. Therefore, a non-parametric Spearman's rho correlation was conducted (Table 7).

Table 7. Correlation between Italian test accuracy and English proficiency

		Italian language test	English proficiency
Spearman's rho	Italian language test	Correlation Coefficient	1.00
		Sig. (2-tailed)	.179*
		N	134

\*. Correlation is significant at the 0.05 level (2-tailed)

Table 7 demonstrates that a significant positive correlation exists between both variables,  $r = .17$ ,  $p = .03$ . However, this association is weak. It can be thus interpreted that although the unknown language and English proficiency scores tend to increase in response to one another, the relationship is still minimal.

#### 4.3.3. The effect of L2 and L3 proficiency on Italian language test accuracy

To further investigate the relationship between L2 and L3 proficiency and the development of learners' metalinguistic awareness as indicated by the Italian language test scores, a multiple linear regression analysis was conducted (Table 8).

Table 8. Linear regression analysis of the relationship between proficiency and decoding Italian

Model summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.393	.155	.142	1.993	

Anova					
	Sum of squares	df	Mean square	F	Sig.
Regression	95.222	2	47.611	11.976	.000
Residual	520.815	131	3.976		
Total	616.037	133			

Coefficient					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(constant)	6.285	1.088		5.777	.000
French	.121	.062	.166	1.940	.054
English	.274	.077	.303	3.536	.001

The regression analysis indicates that 15.5% of the variation in learners' ability to decode a novel language system can be explained by the level of proficiency, suggesting the contribution of French and English proficiency to the overall comprehension of the unfamiliar language system. The ANOVA results confirm that the model is statistically significant ( $F(2, 131) = 11.976$ ,  $p < .001$ ), demonstrating that the combination of French and English

proficiency significantly predicts outcomes in the Italian Reading Comprehension test. The constant ( $B = 6.285, p < .001$ ) implies a baseline score when both French and English proficiency scores are zero. This suggests that language proficiency is one partial contributing factor to the understanding of unknown languages, positing that other important determinants might influence the decoding process.

#### 4.4. Results from the retrospective questionnaire

##### 4.4.1. Reliance on prior language knowledge and contextual inferencing in decoding the unfamiliar language

The analysis of the retrospective questionnaire showed that 86.6% of the participants claimed to be helped the most by L3 French, the language of instruction. This resounding majority is expected, given that French and Italian are both Romance languages, sharing significant lexical, grammatical, and phonological similarities that facilitate crosslinguistic transfer. 7.5% of the participants reported English as the most helpful language, perceiving it as the most useful in recognizing certain words and patterns. The only student who reported L1 Hungarian as the most helpful language did very poorly on the unknown language test and had very low scores on both French and English proficiency tests. Additionally, 4.5% of participants reported French and English to be equally useful and helpful in decoding Italian, implying that some learners perceived a combination of Romance-based and Germanic-based transfer from French and English respectively to be the most efficient. Lastly, 0.7% of participants reported that all three languages were equally important and useful during the decoding process, although this was a very uncommon response. Figure 5 shows the distribution of respondents' answers, in percent, on the most helpful language in decoding the unknown language system.

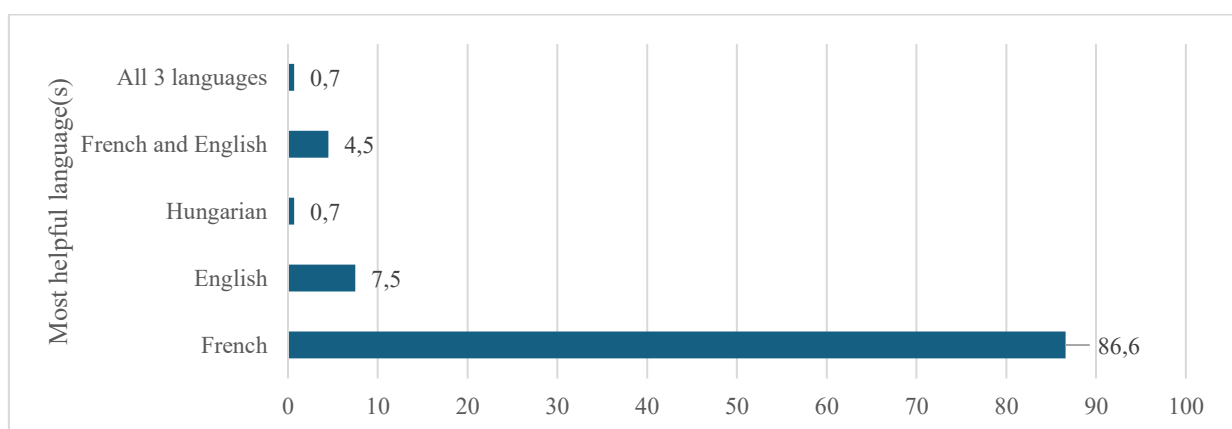


Figure 5. Frequency (%) of languages reported as the most helpful in decoding the Italian texts

French and English appear to have substantially aided comprehension of the Italian language. Figure 5 shows that there were almost as many references to English as to French when reporting on the languages that helped decipher the Italian texts. Although L1 Hungarian was seldom highlighted as the most helpful language, few students reported that it was to some degree helpful in inferring the meaning of certain words in the texts, suggesting that even distant languages can somewhat facilitate crosslinguistic inferencing. However, the minimal linguistic similarity between Hungarian as a Finno-Ugric language and Italian restricted its usefulness.

Participants also commented that they were aided by contextual cues. They reported that if they could understand even a few words in a sentence, they could successfully comprehend the general idea or decode the following words in the texts. Figure 6 reports the frequency of references to prior language knowledge and to contextual cues in decoding the unknown language system.

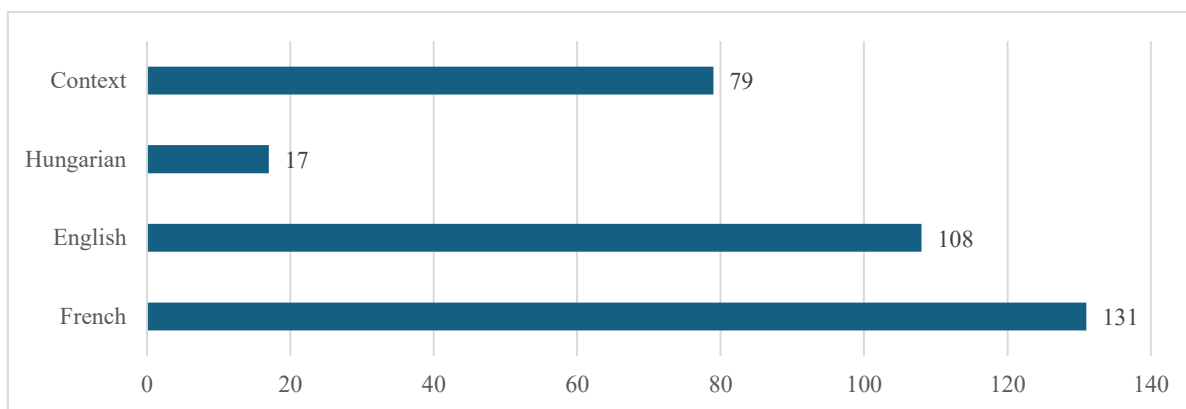


Figure 6. Frequency of references to prior language knowledge and to contextual cues in decoding the Italian texts

#### 4.4.2. Contextual inferencing

The evidence from the retrospective questionnaire, regarding the use of other strategies to comprehend the new language system such as the context, showed that learners relied on keywords in the texts, proper nouns, geographical references, temporal and numerical markers, lexical cognates, and task-driven text navigation to answer the questions in the reading comprehension test. Respondents could understand chunks in the unknown language text using clues about age, city names, and time. These specific cues served as anchor elements supporting the understanding of surrounding items (words). Recognizing a city name or a person's age helped learners make educated guesses about the meaning of the

sentence or adjacent items in the text. Some students were also helped by the questions provided in English and French in the second and third tasks.

#### **4.4.2.1. Proper nouns and geographical inferencing**

Learners often used proper nouns and geographical references as crucial anchors to decode Italian texts. These cues were either universally recognizable or crosslinguistically transparent, allowing participants to easily infer meaning of the surrounding items. Proper nouns served as semantic landmarks: city names like Torino, Milano, and Padova were frequently recognizable through cultural exposure or shared European contexts, while personal names (e.g., Alessandro) offered tangible reference points for reconstructing narratives. These unambiguous, contextually stable elements helped learners bypass linguistic constraints to facilitate understanding of the Italian texts. The following excerpts exemplify the use of this contextual strategy in the decoding process (translated Hungarian-English version).

---

(1)\* yes [the context helped], for example: Alessandro e ha 36 anni > her husband; Torino, Milano e Padova > because the names of the cities are mentioned

(2) The context helped, for example, cities, names, dates, etc

(3) Cities: Torino, Milano e Padova; nelle città di Torino, Milano e Padova, in alcuni parcheggi vicini alle stazioni ferroviarie > there's parking in the railway stations in all these cities

(4) Numbers, town names and individuals [names] also helped provide information.

---

\*. Translated French-English version

#### **4.4.2.2. Temporal and numerical markers**

Another strategy used by participants in decoding the Italian texts was the use of numerical and temporal markers, such as dates, times, and references to daily routines. Many participants identified key numerical indicators and deduced the meaning of sentences based on their logical connections with everyday activities. Participants often used time expressions to understand certain actions or events within the texts. For instance, linking “7:00” to morning routines and “19:00” to dinnertime activities helped participants understand that “the text is about the everyday life of a child”. Connecting numerical information to culturally familiar daily routines appears to be a useful strategy that helps with reading comprehension when vocabulary is limited in certain cases. Furthermore, the inferencing process was also reinforced by references to the days of the week (e.g., “lundi” for Monday) and school

schedules, demonstrating an ability to integrate temporal and numerical cues with situational knowledge. The following excerpts exemplify the use of this contextual strategy in the decoding process (translated Hungarian-English version).

---

(5)\* [...] Alle 22:30 circa > because the time is mentioned; Carlo goes to sleep.

(6) The time helped.

(7) The questions, the time, e.g., 7:00; he wakes up at 7:00

(8) Numbers, days, times of the day. example, 19:00 (he has dinner with his family), lundì [Monday]

(9) yes. example: 7:40 l'autobus che mi porta a scuola > the school bus comes at 7:40

(10) Mi chiamo Sofia. Ho 35 anni > Sofia is 35 years old.

---

\*. Translated French-English version

#### 4.4.2.3. Task-driven text navigation

Another strategy used by participants in inferring meaning from contextual cues was task-driven text navigation, where students relied on the structure of the reading comprehension tasks to support their understanding. Many participants reported that the presence of questions and multiple-choice answer options in their known languages (English and French) provided some support in determining the possible meaning of key Italian words. In contrast to Italian, participants noted that questions written in English or French acted as a scaffolding mechanism, guiding them towards the right direction for understanding unfamiliar terms. The comments indicate that participants strategically navigated between the Italian passages and the provided questions and solutions to confirm or refine their understanding. This suggests an interactive approach to comprehension, in which learners actively engaged with the task's structure to derive meaning rather than merely depending on linguistic transfer from their known languages. The following comments exemplify the use of this contextual strategy in the decoding process (translated Hungarian-English version).

---

(11) Yes, some of them [the words] could be inferred from the questions in the texts [the questions written in English and French]

(12) The context and the questions helped.

(13) The context and the possible answers provided [in the task] helped.

(14) The answers [provided under each question] helped me when the questions under the Italian texts were provided in French or English [the questions under text 2 and 3]

---

[ ] researcher's comments

#### 4.4.2.4. Lexical cognates

Cognate words seem to have led respondents to decode certain phrases or sentences. The following excerpts display the use of cognates in inferring the meaning of certain chunks (translated Hungarian-English version).

---

(15) I could rely on a couple of things like “my family, mia famiglia”. I could relate this to children after that.

(16) The context helped because some sentences weren’t totally understandable for me in the Italian texts unless similar words were there to help me understand a little. Example: tipica giornata > journée typique [French for typical day]

(17) The context helped me, inferring meaning of the whole sentences from main words similar to either French or English. Example: parcheggi (parking), stazioni ferroviarie (station ferroviaire) [French for railway station]

(18) Sometimes, I was able to find the solution from the keywords, e.g., La giornata di Carlo, la journée de Carlo [French for Carlo’s day]

(19) Yes, it wasn’t easy to understand certain words unless there was something familiar surrounding them. E.g., tè e biscotti: tea and biscuits/ thé et biscuits [French] > breakfast

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[ ] researcher’s comments

As the above excerpts show, relying on keywords in the texts that seemed familiar to the participants contributed to the understanding of sentences. References to prior linguistic knowledge (cognates) in the decoding process are observed. Consciously using cognates as contextual clues, hence a strategic and supportive tool in successfully understanding the Italian texts, demonstrates a higher degree of awareness. Cognates allowed learners to establish links between Italian and their L2 and L3, thereby facilitating lexical inference. Certain terms in the Italian texts were instantly identified as they resembled familiar French or English words. For instance, in Excerpt (17), the participant explicitly identified “parcheggi (parking)” and “stazioni ferroviarie (station ferroviaire)” as key words that aided inference. Moreover, comments such as Excerpt (15) and (18) exemplify the way participants were able to deduce the general meaning of phrases by strategically linking isolated cognates (e.g., “my family, mia famiglia”) to broader conceptual categories. This illustrates an active cognitive process whereby known items were utilized to reconstruct unfamiliar linguistic structures. Thus, cognates act as anchor elements, supporting learners in constructing meaning even when complete comprehension is not attained.

### **4.4.3. Decoded items and different awareness categories**

The students' comments revealed their ability to reflect on different lexical, structural, and phonological elements of Italian in relation to their prior language knowledge, therefore demonstrating their metalinguistic reasoning and crosslinguistic thinking. Those who relied on their linguistic experiences provided examples of how Italian and their previously learnt languages are comparable at the lexical, structural, and phonological level, implying an engagement with conscious linguistic analysis. Some students showed awareness of typological proximity between these languages, highlighting the close typological distance between Italian, French, and English.

#### **4.4.3.1. Awareness at the lexical level**

##### **4.4.3.1.1. Awareness of lexical similarities**

Students relied on lexical similarities between their languages to comprehend Italian, as they found this strategy to be the most effective in decoding the novel language system. There were 96 explicit references to the lexical similarities existent between prior linguistic knowledge and the unfamiliar language. The following comments highlight students' awareness of and reliance on lexical similarities (translated Hungarian-English version).

---

(20) Words similar to French helped me the most.

(21) Many Italian words are similar to French. That's how I understood them.

(22) Context and similarities between French and Italian helped me understand words.

(23)\* I tried to focus on the words because I found this way of understanding more efficient.

(24) I could only rely on the words I knew from French which were similar.

(25) P82. English helped with the Italian-English task but not as much with the other texts.

---

\*. Comment originally written in English

Participants could successfully decode items in the Italian passages and answer the reading comprehension questions when making crosslinguistic comparisons. Explicit reflections on their known languages and Italian demonstrates a degree of metalinguistic awareness, where learners consciously analyzed the lexical similarities between languages to infer meaning. The majority of students who relied on English and more significantly on French reflected on cognates, in the decoding process. The following excerpts exemplify the use of French cognates as valuable cues for meaning, when decoding the new language system. Some students also provided translations for certain phrases and full sentences (translated Hungarian-English version).

- 
- (26) P6. The French language helped me understand Italian. Most verbs were similar, such as *offerta*, that is, in French, *offrir*. Nouns and prepositions are also very similar.
- (27) P10. In the Italian text, there were many words similar to French, for example: *sorella* *soeur*, *marito-mari*
- (28) P17. French helped; there are many similarities between French and Italian, and the grammar is also similar. For example, *La mia famiglia è composta in tutto da cinque persone* means (I guess) *ma famille est composée en tout de cinq personnes*.
- (29) P18. [French helped] There was an example of it in the Italian text, like the verb to live [*abita* (Italian)-*habite* (French)]. Examples: Monday [*lunedì* (Italian)-*lundi* (French)] or the numbers [*cinque* (Italian)-*cinq* (French)]
- (30) P29. It [French] helped in all texts because there were very similar words and numbers. For example, “*cinque-cinq*”.
- (31) P66. There were similarities [between French and Italian]. *offerta-offrir*, *società-société*, *té-thé*, *lunedì-lundi*, *ore-heure*, *l’offerta è valida-l’offre est valide*
- (32) P80. I think [French] helped the most among the 3 languages. “*la società*” is I think “*la société*”, the word “*ferroviarie*” is almost the same in French [*ferroviaire*]. All in all, it helped me the most in the first text.
- (33) P81. French helped a lot. In the first text, for example “*stazione ferroviarie*”: *station ferroviaire*, “*lunedì [lunedì] alla Domenica*”, “*La società italiana delle ferrovie Trenitalia fa un’offerta ai viaggiatori*”: *La société ferroviaire italienne Trenitalia fait une offre aux voyageurs*.
- (34) P82. French helped me understand the French and Italian texts. For example, in Italian, “*lontano da*” is very similar to “*loin de*” in French.
- (35) P116. There were a lot of similar words. For example: *anni-an*, *campagna-campagne*, *cinque-cinq*, *lontano-loin*
- (36) P95. *cinque-cinq*, *sorella-soeur*, *persone-personne*, *famiglia-famille*, *anni-ans*, *campagna-campagne*
- (37) P98. It [French] clearly helped. “*la mia famiglia è composta in tutto da cinque persone*” : *ma famille est composée en tout de cinq personnes*, “*vivono lontano da qui, in città*”: *vivent loin d’ici, en ville*, “*mi alzo sempre alle 7:00 e faccio una buona colazione con tè e biscotti*”: *je me lève toujours à 7h00 et je prends un bon petit-déjeuner avec du thé et des biscuits*, “*mio amico*” : *mon ami*.
-

131 respondents provided examples, from each text, of cognates that aided them understand the Italian language, 35 of whom provided the French equivalents to these words and tried to articulate their meta- and cross-linguistic thinking. Learners' search for crosslinguistic equivalents depending on prior linguistic knowledge demonstrates their explicit awareness of the similarities between their languages and the novel language system they are confronted with. Learners were not simply relying on implicit recognition of similar items between the languages involved but actively engaging in metacognitive strategies to deconstruct and reconstruct meaning. Identifying items similar in form and meaning to French, a known language, reveals learners' metalinguistic reasoning and active engagement in comparative analysis between French and Italian during the decoding process. This conscious engagement with linguistic similarities shows a degree of metalinguistic awareness, as learners not only recognized similar word forms but also strategically applied their linguistic knowledge to deduce meaning in an unfamiliar language.

Although English is not as closely related to Italian as French, learners were able to draw meaningful connections between English and Italian, rendering it relatively less challenging for them to infer the meaning of unfamiliar words. Recognizing Italian-English cognates implies a metalinguistic ability to compare and contrast linguistic elements across typologically different languages. While English is a Germanic language, it has a large number of words that are orthographically and phonologically similar to their Italian counterparts, due to its widespread borrowing from Latin and Romance languages. Participants who relied on English in the decoding process demonstrated crosslinguistic awareness. They were actively engaging in lexical transfer strategies, identifying these similarities at the lexical and even structural level. Most participants could in fact provide accurate translations of some words, phrases, or full sentences. The following comments illustrate how English-Italian cognates served as valuable lexical scaffolds, supporting comprehension and enhancing learners' ability to effectively navigate the Italian texts. (translated Hungarian-English version).

---

(38) P62. English helped, not necessarily the most helpful, but there were words that resembled each other, e.g., frequentano-frequent

(39) P85. English helped a little. Societa-society, offerta-offer, stazione-station, valida-valid, vicino-near, parcheggio-parking, biscotti-biscuits, informatica, studio, computer, composta-compose

(40) P66. There were fewer similarities [between English and Italian compared to French and

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Italian]. offerta-offer, autobus, biscotti, té.

(41) P75. English helped less than French. scuola-school, frequentano-frequent, Martina e Giacomo frequentano le scuole elementari- Martina and Giacomo frequent/go to elementary school.

(42)\* P78. English helped. té e biscotti-tea with biscuits, informatic-information technology, la mia famiglia-family, l'offerta è valida-the offer is valid.

(43) P49. It [English] helps only with the Italian-English text. "Ogni giorno ho 6 ore di lezione" > every day I have 6 hours of lessons, "ho molte materie che riguardano il mondo dell'informatica" > I have multiple subjects regarding the world of information technology.

(44) P72. English helped. L'offerta è valida > the offer is valid, stazione > station, treno > train, Martina e Giacomo frequentano le scuole elementari > Martina e Giacomo frequent elementary school.

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\*. Comment originally written in French

#### 4.4.3.1.2. False cognates

Few students got misled by false cognates as shown in the following comments (in bold). The three participants reported here (P102, P107, and P122) received average scores of 10-12 points on the Italian language test but performed considerably low on the French proficiency test, which might have hindered their ability to process cognates effectively. These students were misled by the form of these words, at the expense of their differing meanings within their corresponding sentences. They failed to understand the correct semantics based on the surrounding words and contextual cues.

---

(45) P102. French helped a lot. prendo-prendre, porta-porte, **materie-material** [*matière* (French)-*subject* (English)], **letto-lettre** {letter} [*lire* (French)-*read* (English)], **libri-libre** {free} [*livres* (French)-*books* (English)], amico-ami

(46) P107. **alle-aller** {to go} [à (French)-at (English)], **biglietto-bicyclette** {bicycle} [billet (French)-ticket (English)], **compiti-comprendre** {to understand} [devoirs (French)-homework (English)], la società-la société, italiana-italien, offerta-offrir, prendo-prendre

(47) P122. **alle-aller** {to go} [à (French)-at (English)]

(48) P107. English was sometimes helpful. **Societa-social** [*société* (French)-company (English)], automobile-automobil

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Note: { } = English translation of the equivalent provided by the participant; [ ] = correct equivalent in French and English

Learners' reflections on crosslinguistic similarities reveal an instance of lexical awareness, yet their misinterpretations of false cognates underline a gap in their metalinguistic control when processing these lexical elements. The students' reliance on surface-level similarities, rather than deeper semantic understanding, resulted in errors, which indicates that recognition of cognates is insufficient, and that successful lexical transfer necessitates awareness of contextual constraints and semantic nuances. As shown in the comments, the participants mostly relied on orthographic and phonological resemblance between Italian and French/English words. Semantic misinterpretations resulted from their mistaken assumption that the words had the same meanings across languages. For instance, P102 confused *libri* (English: books) with *libre* (French: free), failing to recognize that the correct French equivalent is *livres*. Similarly, P107 associated *biglietto* (English: ticket) with *bicyclette* (French: bicycle), showing a form-based transfer that disregarded meaning. These errors highlight overgeneralization which is a common phenomenon in multilingual language processing, perhaps as a result of the number of cognate words both languages share or learners' developing proficiency in French. Furthermore, as evidenced by the participants' lower French proficiency test scores, the difficulty in appropriately processing cognates may stem from lower French proficiency. A poorer command of French vocabulary and structure might have hindered their ability to distinguish between true and false cognates.

Additionally, some participants demonstrated grammatical inaccuracies. Some inconsistencies are observed in the gender of the adjective *italiana* (feminine) which has *italienne* (as opposed to *italien* which is used for masculine nouns) as its equivalent in French and the lexical category of *offerta*, a noun (offer), to which the verb *offrire* is provided as its crosslinguistic equivalent.

#### **4.4.3.1.3. Linguistic self-confidence: the role of English in decoding Italian**

English has also been reported to support students' comprehension of the unknown language. Although English comes second to French in supporting the decoding process, 10 students found it the most helpful, 8 among whom scored significantly low on the French proficiency test but received higher results on the English proficiency test. The following comments (translated Hungarian-English version) highlight participants' reliance on English, given their greater confidence in their knowledge of English in comparison to their French command. Although they received an average and a high score, respectively, on the French proficiency test, their reported stronger command of English influenced their approach to decoding the Italian texts, on which they got a high score.

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(49) P8. I mostly use English on a daily basis beside Hungarian. It was easy to rely on English since I speak it well.

(50) P17. Almost everything on the internet is in English, so I'm used to it. I speak this language the best beside my native language, which sometimes helps with remembering words.

(51)\* P78. I think what helps me is speaking English.

(52) P80. English [was the most helpful] because I'm more confident in my knowledge regarding the language.

(53) P86. I feel more confident in my English knowledge that's why I relied on it so much when understanding the texts.

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\*. Comment originally written in French

#### **4.4.3.2. Awareness of typological proximity**

A number of participants reported that “French is closer to Italian” compared to English and especially Hungarian. French, as a language typologically related to Italian, evidently influenced the decoding strategies used by learners, although some students preferred relying on English in the decoding process given their higher self-confidence in using the language. The comments below (translated Hungarian-English version) exemplify participants' awareness of the typological distance between the studied languages.

---

(54) P17. French and Italian are quite similar.

(55) P17. French helped; there are many similarities between French and Italian, and the grammar is also similar.

(56) P28. Context and similar words with same Latin origin [helped]. Example: lontano, long [Latin root]

(57) P96. Italian and French are Latin languages. They have many similarities in words.

(58) P19. The Hungarian language did not help me because it is not similar to any other language.

(59) P109. It [Hungarian] didn't help much because Hungarian is not a Latin-based language.

---

Students' perception of the distance between the novel and known languages clearly shaped their “view of the appropriate language source” for crosslinguistic consultations (Mieszkowska & Otwinowska, 2015, p. 217). The closer the relationship between languages, the more crosslinguistic interaction (Mieszkowska & Otwinowska, 2015). Most students who

performed poorly on the unknown language test failed to capture any similarities between their previously learnt languages and Italian.

Other students commented, as shown below (translated Hungarian-English version), that they drew less on their English language, highlighting their awareness of the existent similarities between French and Italian. Participant P105, for instance, demonstrates her awareness of the interconnections between her previously learnt languages as well as between those languages and Italian, which indicates a developed meta- and cross-linguistic awareness.

---

(60) P58. If I only spoke English, I wouldn't have understood, but the French numbers and structures helped.

(61) P62. Comparing these languages, French and Italian have the most similarities. Both of them are Latin languages but also English has words with Latin origin, that's why there are some similar words between English and Italian.

(62) P81. [English helped] just a little. French helped me a bit more. But words like "biscotti" and "l'autobus" are similar to the English words.

(63) P105. There were fewer words that I understood from English, those generally resembled French.

(64) P129. I relied on French because both French and Italian have Latin origin. That's why they share many similarities.

---

[ ] Researcher's notes

The cognate words that the students mentioned when answering the question whether English helped in the decoding process predominantly trace their origin back to Latin. Words like *biscotti* (biscuit), *autobus* (autobus), *famiglia* (family), *treno* (train), and *informatica* (information technology) have Latin roots, which some respondents explicitly expressed.

#### **4.4.3.3. Awareness at the grammatical level**

Seven of the respondents who achieved high scores in the Italian texts not only reflected on lexical but also structural grammatical similarities, as displayed by the following excerpts.

---

(65) P16. The sentence structure is similar to French.

(66) P17. French helped; there are many similarities between French and Italian, and the

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grammar is also similar.

(67) P18. The sentence structure was similar.

(68) P23. There were similarities in the verbs, but with different endings: Andrea frequenta, Andrea fréquente [French for Andrea frequents] and Martina e Giacomo frequentano, ils fréquentent [French for they frequent].

(69) P60. The word order helps.

(70) P104. The sentence structure helps.

(71) P90. The structure of English, French and Italian seems the same: subject-verb-object. e.g., Martina e Giacomo frequentano le scuole elementary.

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[ ] Researcher's notes

These comments reveal students' awareness of grammatical structures, as they noted that the sentence structure of Italian resembles that of French. This shows that students did not only focus on lexical similarities but also on how words are arranged to form coherent and grammatically correct sentences. Some participants explicitly stated that the shared word order or sentence structure, i.e., Subject-Verb-Object (SVO) structure, across Italian, French, and English was one of the key factors aiding comprehension. This awareness of syntactic patterns shows that learners were drawing on their prior linguistic knowledge to decipher sentence meaning beyond individual word recognition.

Participant P23 went beyond sentence structure and observed parallels in verb morphology, particularly in verb conjugation patterns across French and Italian, which demonstrates her morpho-syntactic awareness. She recognized that the verb *frequenta* (Andrea frequents) resembles *fréquente* in French, and *frequentano* (they frequent) is analogous to *ils fréquentent* in French. This shows her awareness of verb conjugation patterns, particularly in person and number marking.

#### **4.4.3.4. Awareness at the phonological level**

Few (N=6) references to phonological similarities were also made by students who showed a considerably high level of meta- and crosslinguistic awareness. The following two comments demonstrate participants 9 and 110's awareness of phonological similarities.

---

(72) P9. The sounds of words and the words helped a lot.

(73) P110. [...] similar pronunciation and spelling of words helped.

---

Although the two students neither provided examples from the texts to support their statements nor specifically stated the language they perceived as similar to Italian in

pronunciation, they stated that they were aided the most by L3 French. Therefore, it can be deduced that they most likely drew on their French knowledge to decode Italian pronunciation.

Several participants noted instances of how phonetic structure and pronunciation of Italian words were similar to those of French, highlighting the importance of crosslinguistic phonological awareness in multilingual comprehension. The following excerpts illustrate learners' explicit references of words sharing phonetic similarities with their known languages, particularly French.

---

(74) P6. Few words sounded similar like *parcheggio* and parking.

(75) P39. The pronunciation of some words is similar. e.g., *famiglia-famille* [family], *tipica-tipique* [typical]

(76) P42. Sometimes there are words in Italian that sound similar to French, example: *mondo* (*monde*) [world], *chitarra* (*guitare*) [guitar], *buona* (*bonne*) [good (feminine)].

(77) P75. Words like *giorno-journée* [day], *famiglia-famille* [family], *dormire-dormir* [to sleep], *campagna-campagne* [countryside] are pronounced the same.

---

[ ] English translation of the words

P6 noted that *parcheggio* in Italian sounded similar to its English equivalent parking, suggesting that the learner could use phonemic similarities to make meaning-based inferences. Likewise, P39 and P42 provided specific examples of French-Italian phonological resemblance, including *famiglia-famille* (family), *tipica-tipique* (typical), *chitarra-guitare* (guitar) and *mondo-monde* (world). These pairs are readily recognizable across languages due to their phonetic consistency as well as their orthographic and semantic resemblance. P75 further elaborated on phonological overlap by listing several Italian words that sound similar to French, such as *giorno-journée* (day), *campagna-campagne* (countryside) and *famiglia-famille* (family). The comparison between *campagna-campagne* and *famiglia-famille* points to a key aspect of phonemic awareness in crosslinguistic processing, specifically in the recognition of silent consonants and phonological simplifications between Italian and French. Learners might have recognized that the “gn” in Italian might correspond in pronunciation to the “gn” in French, which represents the palatal nasal sound /ɲ/, similar to the Spanish “ñ”.

This indicates an implicit phonological processing, during the silent reading, which helps recognize words with familiar phonological forms. Thus, students' explicit reflections on

phonological similarities suggest their use of orthography-to-phonology mappings from known languages, particularly French, to phonemically decode the Italian words.

#### **4.5. Language attitudes and motivation**

This section aims to answer one of the research aims by empirically testing the validity and structure of the motivational and attitudinal constructs, in the adapted version of Dörnyei and Csizér's Language Disposition Questionnaire, within this particular sample of Hungarian-French bilingual learners of English as a foreign language. Using factor analysis, the first step is to investigate whether the motivational items cluster under the same motivational constructs as in the original study or if they load differently in this particular multilingual educational context. By examining the factor loadings, the analysis will shed light on the stability and adaptability of Dörnyei's motivational, attitudinal dimensions which were fundamental in developing the L2 Motivation Self System. Following the factor analysis, a descriptive analysis of participants' attitudes and motivation towards learning French, the language of instruction in their bilingual program, and English, a foreign but a more globalized language is to be presented. This analysis aims to identify general trends, nuanced individual variations, and potential pedagogical implications for multilingual education.

##### **4.5.1. Factor analysis of the motivational/attitudinal items concerning the target languages and their communities (items 1-21)**

In order to reduce the number of variables in the motivation questionnaire by identifying broader underlying dimensions, all motivational, attitudinal items were submitted to factor analyses; a separate analysis was conducted both each of the languages. A principal axis factor extraction method was applied given the small size of the sample and the non-normality of distribution of the data (Fabrigar et al., 1999), and an oblique rotation was used after checking the significance of the correlation between the items through a Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. All variables receiving a coefficient value of 0.3 and below have not be considered. The final pattern matrices obtained in the factor analyses contained clusters of variables determining each factor. A five-factor solution was initially extracted; however, a four-factor structure was ultimately adopted to coherently explain the data. The emerging factors for each of the languages were not so similar and not so identical to the factor loadings in the original study. Table 9 presents a summary of the item clusters while the factor pattern matrices is included in Appendix 7.

*French*

As seen in Table 9, the factor matrix for French revealed a five-factor structure. Factor 1 received salient loadings from four items (14, 15, 16, and 18) which predominantly reflect interest in the cultural products of the target community. This factor is associated with appreciation and enjoyment of films, TV programs and video-based platforms, and the frequency of consuming such content. Hence, Factor 1, as in the original study, represents Cultural Interest. However, item 14, which is related to the appreciation of meeting French native speakers, shows a positive attitude towards the French community, implying that interest in the culture might be intertwined with an interest in engaging with native speakers. Factor 2 is associated with items 2, 3, 4, 6, and 7 which predominantly reflect instrumental motivation as in the original motivation model. These variables highlight the perceived pragmatic, instrumental values of learning French including knowledge development, travel opportunities, and career advancement. This factor, hence, reflects instrumentality, although item 4 was originally related to integrativeness as it centers around the importance of speaking the language in order to learn about the culture and art of its speakers. This can possibly be explained by the fact that in globalized contexts, integrativeness and instrumentality might overlap as learning about Ln culture can be viewed as a practical asset rather than an emotional identification. Factor 3 received loadings from variables 1, 10, 11, and 21 which are mostly associated with a positive general outlook on the French language, its speakers, and culture. Learners having high scores on items 1, 10, and 11 show a desire to interact with and become similar to French native speakers whereas scoring high on item 21 can reflect a strong inclination towards cultural immersion. Since most items are associated with an aspiration to meet, interact, and be similar to L3 speakers, this factor will be termed Integrativeness as in the original study. The three items loading onto Factor 4 (items 12, 13, 17) are connected to the learners' perception of the importance and wealth of the L3 community (items 12 and 13). However, item 17 is associated with the attitude students have towards L3 speakers. Item 17 brings an affective component to the factor bundle and is distinct from solely vitality-based perceptions. The last factor received loadings from items 8 and 9 which concern participants' perception of their parents' Ln competence and therefore Factor 5 will be referred to as Parents' Ln Proficiency.

### *English*

Table 9 illustrates the factor matrix for English revealing a five-factor structure. Factor 1 received loadings from items 15, 16, 18, and 21 which clearly reflect interest in the cultural products of the target community. Similar to the corresponding factor for French, this variable

cluster shows as an appreciation and enjoyment of films, TV programs and video-based platforms, pop music, and the frequency of consuming such media content. Hence, this factor, as in the original motivation model, will be labelled as Cultural Interest. Factor 2 received loadings from variables 1, 10, 11, 14, and 17, which are predominantly associated with a desire to meet and communicate with L2 speakers and an appraisal of direct contact with the L2 community. This factor therefore combines items related to integrativeness and attitudes towards the L2 speakers/ community. As Dörnyei et al. (2006) explained, the positive outlook on the L2 community (Integrativeness) can be closely connected to and affected by the attitudes learners have towards the L2 speakers. This merging reflects the reality that integrativeness is deeply intertwined with learners' perception of L2 speakers, which can strongly influence their desire to learn the language. Factor 3, Instrumentality, received loadings from items 2 and 7, which reflect pragmatic motivations as in the case with the French factor matrix. These variables highlight the perceived instrumental values of learning English with learners emphasizing knowledge development and career advancement. Item 12, concerning learners' perception of the country as developed, further stresses the idea that learners view English as an asset tied to professional opportunities and economic benefits, which shows how instrumental motives and vitality of L2 community can be intertwined. Factor 4 received loadings from variables 8 and 9 which are related to participants' perception of their parents' L1 competence. This emphasizes the role of family influence in shaping language learners' motivation and attitude. Items 3 and 4 loaded onto Factor 5 highlighting perceptions of the language's significance on a global scale (item 3) and its role in understanding culture (item 4). Although Item 4 was traditionally related to integrativeness, its loading here implies that cultural knowledge is viewed as a useful asset rather than just an identity-driven goal, which is consistent with studies demonstrating that instrumentality and integrativeness might overlap in globalized learning environments.

Table 9. Results of the factor analyses of the attitudinal items (items 1-21): variable clusters determining each factor (variables in the table are referred to by short labels as used in the original study)

	<b>French</b>	<b>English</b>
<b>Factor 1</b>	18 Frequency of watching films/ TV programs in Ln 15 Like films 16 Like TV programs/video-based platforms 14 Meet Ln speakers	18 Frequency of watching films/ TV programs in Ln 15 Like films 16 Like TV programs/video-based platforms 21 Like pop music
<b>Factor 2</b>	3 Ln important in world 2 Become knowledgeable 6 Useful for travel 4 Get to know culture 7 Useful for career	14 Meet Ln speakers 1 Like Ln 17 Like Ln speakers 11 Travel to country 10 Similar to Ln speakers
<b>Factor 3</b>	1 Like Ln 21 Like pop music 11 Travel to country 10 Similar to Ln speakers	7 Useful for career 2 Become knowledgeable
<b>Factor 4</b>	12 Country: developed 13 Country: important 17 Like Ln speakers	8 Perception of mother's Ln proficiency 9 Perception of father's Ln proficiency
<b>Factor 5</b>	20 Frequency of meeting Ln speakers 9 Perception of father's Ln proficiency 8 Perception of mother's Ln proficiency	3 Ln important in world 4 Get to know culture

*Summary of the factor analyses*

Based on the exploratory factor analysis (EFA) run for both French and English, a unified four-factor structure was established to ensure cross-language comparability. Items that did not load onto either language were not considered in the final factor structure. The final suggested model consists of Cultural Interest, Instrumentality, Integrativeness & Attitudes towards Ln speakers which will be referred to as Ideal Ln Self, and Parental Influence. This structure was established after closely analyzing the factor loading across both language groups, guaranteeing that the factors capture common motivational dimensions while maintaining conceptual integrity.

Factor 1, Cultural Interest, includes variables related to learners' engagement with and appreciation of Ln media, entertainment, and exposure to cultural products, as evidenced by

learners' enjoyment of films (Item 15), TV programs/video-based platforms (Item 16), frequency of watching Ln content (Item 18), and preference for L2 music (Item 21).

Factor 2, which is labelled Instrumentality, reflects the pragmatic instrumental value of language learning. It encompasses variables related to career advancement and benefits (Item 7), knowledge development (Item 2), and Ln as important in the world (Item 3).

Integrativeness and attitudes towards Ln speakers/communities merge to make Factor 3, Ideal Ln Self, which includes liking the language (Item 1), identifying with native speakers (Item 10), willingness to travel to the Ln country (Item 11), and overall emotional connection with the Ln community (Items 17, 14, 4). In this light, Dörnyei et al. (2006) found that integrative motivation can be reinforced by favorable attitudes towards the L2 community. Since learners' desire to socially integrate into the target language community is often associated with their perceptions of and attitudes towards the L2 speakers and culture, the merging of these two constructs ensures conceptual consistency.

Factor 4, Parental Influence, includes learners' perceptions of their parents' Ln proficiency (Items 8 and 9), reflecting the perceived influence of parental language ability on motivation.

#### **4.5.2. Factor analysis of the motivational/attitudinal items concerning the target languages and their communities (items 22-29)**

The questionnaire included eight items that examined learners' generic perceptions of their learning environment and linguistic self-confidence, regardless of any particular L2 context. To investigate the underlying structure of these perceptions, a factor analysis was carried out, similar to the analyses conducted on the L2-specific items. Table 10 presents the factor matrices revealing a three-factor solution from which a two-factor structure is adopted to explain the data, as only one item loaded onto Factor 3.

Table 10. Factor analysis of the non-L2-specific items (principal axis extraction, oblique rotation, only loadings above 0.3 are considered)

Variables	Factor 1	Factor 2	Factor 3
I don't think that foreign languages are important school subjects	0.698		
My parents do not consider foreign languages important school subjects.	0.536		
People around me tend to think that it is a good thing to know foreign languages.	0.372		

Learning a foreign language is a difficult task.		0.492	
I am sure I will be able to learn a foreign language well.		0.492	
I think I am the type who would feel anxious and ill at ease if I had to speak to someone in a foreign language.		0.488	
Learning foreign languages makes me fear that I will feel less Hungarian because of it.			0.797
I often watch satellite programmes on TV.			

Similar to the original study findings, Factor 1, which is labelled Milieu, received salient loadings from items 25, 27, and 24. These items reflect the general appreciation of foreign languages in the learners' immediate environment including the school setting and parents' and friends' views. Factor 2 received loadings from items 29, 22, and 23 which are connected to learners' linguistic self-confidence. Factor 3, however, only included one item related to learners' fear of assimilation. Hence, factor 3 will be disregarded as it did not receive enough loadings. Item 26, related to fear of assimilation, did not load on either of the factors, thus differing from the pattern observed in the original study. To this end, item 26 would be disregarded.

#### **4.5.3. Composition of the multi-item scales**

The factor analyses previously described lead to slightly different results from the original study by Dörnyei's et al. (2006). However, as explained above, the current study findings are in line with the existing research on motivation. The factor analytical results have been used to form the basis of computing six multi-item scales. These motivational dimensions are detailed in Table 11 containing the complete list of constructs, the constituent motivational/attitudinal items of each scale, and the Cronbach's Alpha internal consistency reliability coefficients for both L2 and L3.

Table 11. The composition of the motivational/attitudinal constructs and the Cronbach Alpha coefficient for each construct

	Cronbach Alpha	
	French	English
<p>Ideal Ln self</p> <ul style="list-style-type: none"> <li>• How much do you like these languages?</li> <li>• How much would you like to become similar to the people who speak these languages?</li> <li>• How much would you like to travel to these countries?</li> <li>• How important do you think learning these languages is in order to learn more about the culture and art of its speakers?</li> <li>• How much do you like meeting foreigners from these countries?</li> <li>• How much do you like the people who live in these countries?</li> </ul>	0.67	0.68
<p>Instrumentality</p> <ul style="list-style-type: none"> <li>• How much do you think knowing these languages would help you to become a more knowledgeable person?</li> <li>• How important do you think these languages are in the world these days?</li> <li>• How much do you think knowing these languages would help your future career?</li> </ul>	0.65	0.40
<p>Cultural Interest</p> <ul style="list-style-type: none"> <li>• How much do you like the films made in these countries?</li> <li>• How much do you like the TV programmes made in these countries?</li> <li>• How often do you see films/TV programmes made in these countries?</li> <li>• How much do you like the pop music of these countries?</li> </ul>	0.62	0.70
<p>Parental Influence</p> <ul style="list-style-type: none"> <li>• How well does your mother speak these languages?</li> <li>• How well does your father speak these</li> </ul>	0.33	0.49

languages?		
Overall Cronbach Alpha	0.76	0.70
Milieu <ul style="list-style-type: none"> <li>• People around me tend to think that it is a good thing to know foreign languages.</li> <li>• I don't think that foreign languages are important school subjects.</li> <li>• My parents do not consider foreign languages important school subjects.</li> </ul>	0.43	
Linguistic Self-Confidence <ul style="list-style-type: none"> <li>• I am sure I will be able to learn a foreign language well.</li> <li>• I think I am the type who would feel anxious and ill at ease if I had to speak to someone in a foreign language.</li> <li>• Learning a foreign language is a difficult task.</li> </ul>	0.44	

As shown in Table 11, most of the scales across French and English demonstrate acceptable to good reliability coefficients, given the small number of items loading onto each scale. Additionally, the robustness and reliability of these variables have already been established in Dörnyei's et al.'s (2006) large-scale longitudinal investigation. The consistency of these measures across contexts further strengthens the reliability of the current findings.

#### **4.6. Learners' motivation and attitudes towards learning French and English**

Second language acquisition (SLA) research, particularly in contexts involving multilingual or sequential language learning, has extensively established the influence of learner motivation and language attitudes on educational outcomes. Motivation and attitudes are crucial psychological concepts that affect learners' engagement and tenacity as well as their success in learning target languages. Building on the methodological foundations established in the preceding section, this part of the study explores learners' motivations and attitudinal dispositions across French, as the language of instruction, and English, the more globalized language.

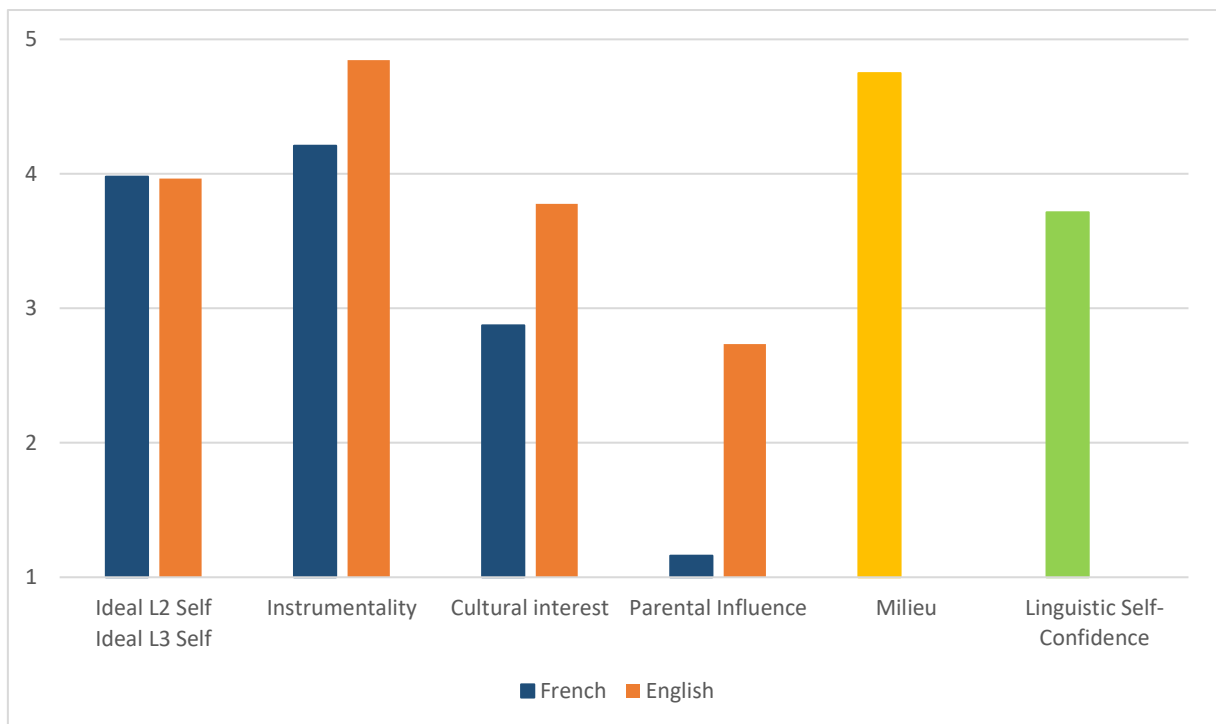


Figure 7. Learners' motivation and attitudes towards learning both French and English

Figure 7 displays the mean scores of the different motivational/attitudinal factors across French (L3 in order of acquisition and the language of instruction in the bilingual program) and English (L2 in order of acquisition and the more globalized language), highlighting major differences in learners' perception of and interaction with each language. Ideal Ln Self was equally influential and significant for both languages (French:  $M=3.97$ , English:  $M=3.96$ ), indicating that learners have positive attitudes towards both languages and their communities and a strong sense of identification with Ln speakers, as they reflected their desire to become similar to them, picturing themselves as proficient Ln users. Additionally, instrumentality, which reflects the perceived pragmatic benefits of learning each of the languages, was higher for English ( $M=4.84$ ) than for French ( $M=4.20$ ), suggesting that learners perceive English as more useful for career and academic advancement. Similarly, cultural interest was higher for English ( $M=3.77$ ) compared to French ( $M=2.87$ ), suggesting a higher level of exposure and engagement with English-language media and cultural products. Regarding parental influence, the figure shows that parents have higher proficiency in English than French as perceived by the participants. Although the mean scores are somewhat low (French:  $M=1.16$ , English:  $M=2.73$ ), learners' perception of their parents' Ln competence might have played a role in their motivation towards learning English as a foreign language and influenced their exposure to the language. The findings indicate that learners have a moderate degree of confidence in their ability to learn and use a foreign language without feeling anxious

( $M=3.71$ ), which might have been likely influenced by their multilingual experiences, while Milieu seems to be highly influential and supportive of foreign language learning ( $M=4.74$ ).

## 4.7. Intended effort as the criterion measure

### 4.7.1. Effort invested in learning L2 and L3

The motivation questionnaire adopted in this study included one targeted criterion measure concerning the level of effort learners are willing to invest in learning both French and English (item 5). A strong score for intended effort would imply a strong dedication and motivation towards L2/L3 learning (Kwok & Carson, 2018). Table 12 illustrates the descriptive statistics of effort intended to be put into learning French and English.

Table 12. Descriptive statistics for intended effort across French and English

	N	Minimum	Maximum	Mean	Std. Deviation
Effort/ French	134	2.00	5.00	3.95	.92
Effort/ English	134	.00	5.00	3.39	1.16

Table 12 shows that students, on average, are eager to expend more effort in learning French ( $M = 3.99$ ,  $SD = 0.93$ ) than English ( $M = 3.40$ ,  $SD = 1.17$ ). The scores for effort invested in learning French range from 2.00 to 5.00, indicating greater consistency in students' dedication to learning the language, while the wider range for English (0.00 to 5.00) and higher standard deviation suggest greater variability in learners' commitment to learning English.

### 4.7.2. The connection between intended effort and the six motivational dimensions

Exploring the relationship between motivational/ attitudinal constructs and intended effort is important in determining what motivates learners to devote time and put effort and energy into language learning. Studying the correlation between the six motivational constructs and participants' intended effort for learning French and English aims to identify the motivational factors that most strongly predict learners' readiness to exert effort in L2/ L3 learning and the extent to which these influences vary between French and English. Table 13 illustrates a non-parametric Spearman's rho correlation conducted between the motivational scales and intended effort across both languages.

Table 13. Correlation between intended effort and the six motivational dimensions

		Effort/ French	Effort/ English
Ideal Ln Self	Correlation coefficient	.351**	.499**
	Sig. (1-tailed)	.000	.000
Instrumentality	Correlation coefficient	.285**	.110
	Sig. (1-tailed)	.000	.103
Cultural Interest	Correlation coefficient	.359**	.332**
	Sig. (1-tailed)	.000	.000
Parental Influence	Correlation coefficient	-.022	-.065
	Sig. (1-tailed)	.399	.228
Milieu	Correlation coefficient	-.006	.067
	Sig. (1-tailed)	.944	.228
Linguistic self-confidence	Correlation coefficient	.039	-.003
	Sig. (1-tailed)	.328	.485
	N	134	134

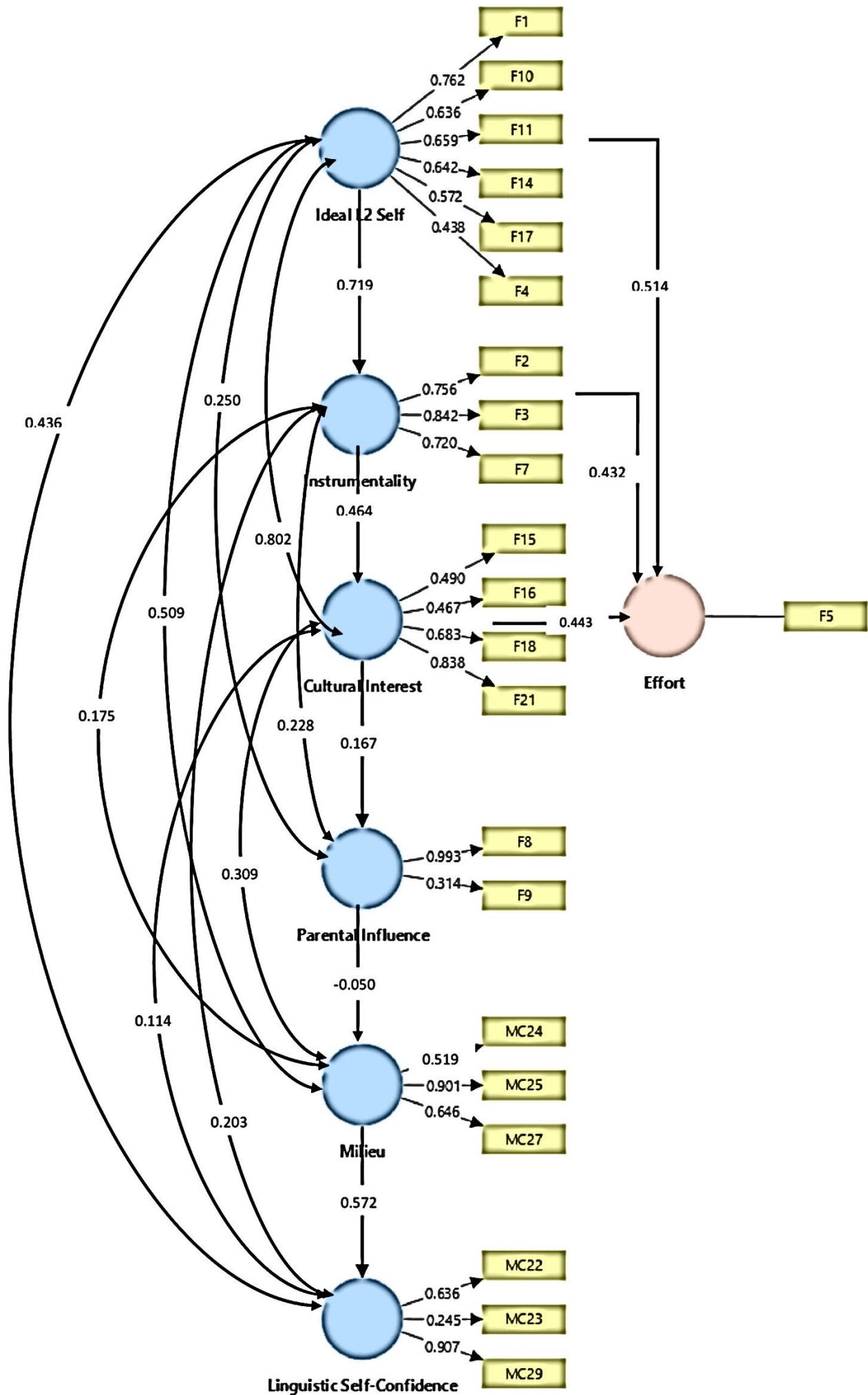
\*\* . Correlation is significant at the 0.01 level (1-tailed).

A close look at the correlation shows that the Ideal Ln Self is significantly correlated with intended effort for both French ( $r = .351, p = .000$ ) and English ( $r = .499, p = .000$ ). This connection is stronger for English, indicating that motivation to study the language is more significantly influenced by a desire to become fluent like the native L2 speakers and by a favorable attitude towards the L2 community. Additionally, Cultural Interest, for both languages, shows a significant positive correlation with effort (French:  $r = .359, p = .000$ ; English:  $r = .332, p = .000$ ), underscoring the role of engagement with cultural products in motivating learners to expend effort in language learning. Instrumentality is also positively correlated with effort but only for French ( $r = .285, p = .000$ ), although the relationship is not so robust, and not for English. This might suggest that learners perceive French as instrumentally useful within their academic setting, whereas English may already be viewed as globally necessary, reducing the direct impact of instrumental motivation. Conversely, Parental Influence, Milieu, and Linguistic Self-Confidence show no connection with effort, suggesting that learners' motivation is mostly self-driven rather than influenced by external factors.

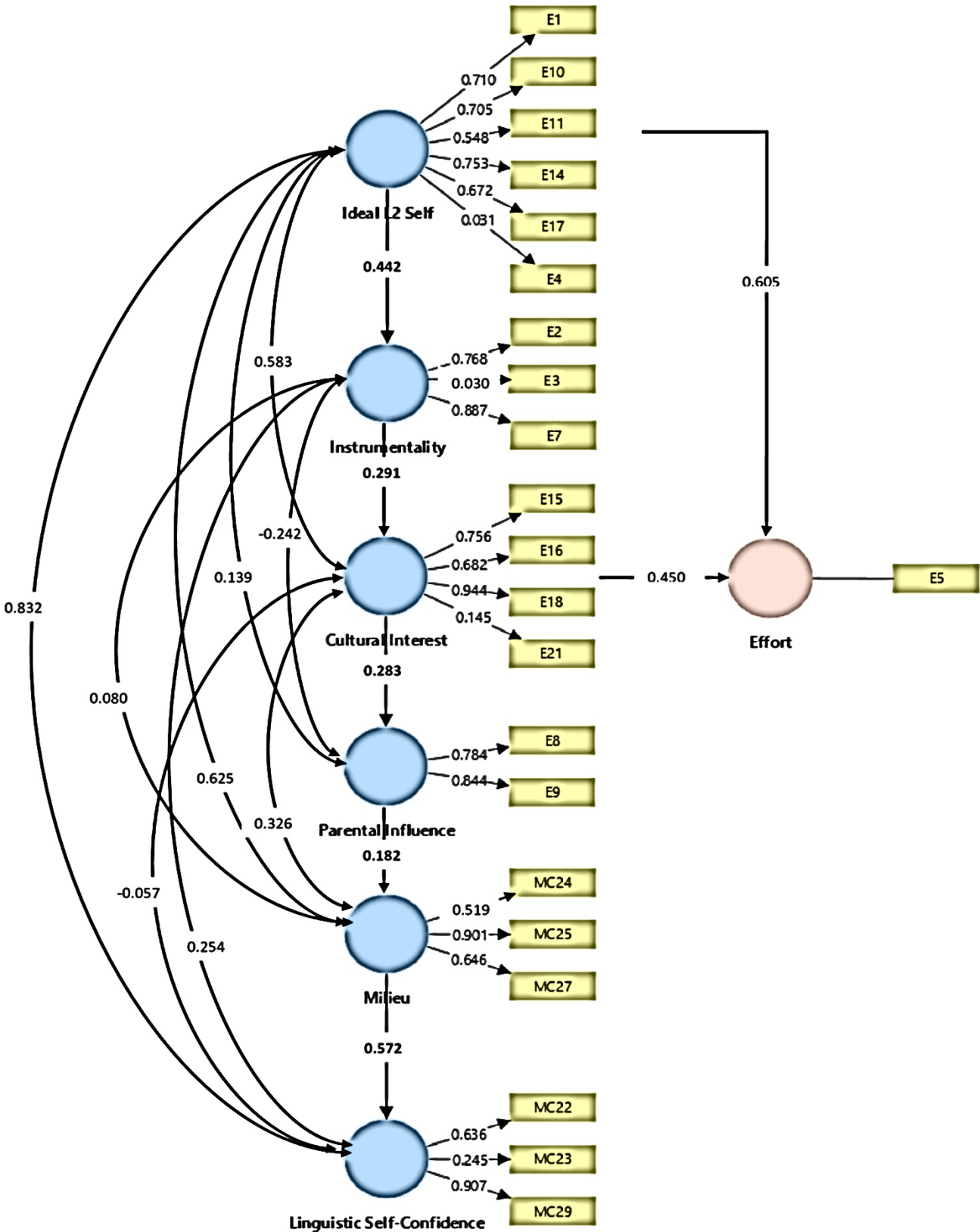
#### **4.8. The inter-relationship of the multiple variables within the motivational dimensions of the language motivation questionnaire: Partial Least Squares Structural Equation Modelling (PLS-SEM)**

In order to gain a deeper and better understanding of the underlying structure of motivation in language learning, Partial Least Squares Structural Equation Modelling (PLS-SEM) is used to investigate the interconnections between the multiple motivational/ attitudinal constructs across French and English. The choice to conduct the PLS-SEM analysis is based on the small sample size of this study (Hair et al., 2019a, 2019b). Additionally, given the considerably large number of items in the motivation questionnaire vis a vis the small population size, a PLS-SEM algorithm would be the most appropriate to make an overarching examination of the connections between latent constructs, offering insights into how different motivational factors interact and contribute to shaping learners' motivation. The analysis is set to model the interactions existent among all motivational dimensions so as to determine whether certain constructs have a greater impact on motivation and how they collectively contribute to learners' willingness and preparedness to exert effort and engage in L2 and L3 learning.

##### **4.8.1. PLS-SEM for the French language**



4.8.2. PLS-SEM for the English language



### 4.8.3. Measurement model assessment

The measurement model assessment is based on the guidelines of Hair et al. (2019a) to affirm the reliability and validity of the motivational constructs and their dimensions across both French and English models. Table 14 shows Composite Reliability (CR) and Average Variance Extracted (AVE).

Table 14. Reliability and Convergent Validity

	French		English	
	CR	AVE	CR	AVE
Ideal Ln Self	0.728	0.406	0.804	0.423
Instrumentality	0.670	0.599	0.818	0.692
Cultural Interest	0.671	0.500	0.833	0.561
Parental Influence	0.948	0.554	0.769	0.650
Milieu	0.928	0.417	0.739	0.405
Linguistic self-confidence	0.643	0.466	0.646	0.403

CR values above 0.60, in exploratory designs, generally indicate acceptable reliability. Ideally, almost all constructs in the French and English datasets demonstrate strong internal consistency. AVE values, on the other hand, should ideally be greater than 0.50, but since AVE is considered a stringent criterion, a value of 0.4 is acceptable if the CR value is adequate (Fornell & Larcker, 1981; Maruf et al., 2021). In this light, the convergent validity of all constructs is confirmed across both models. Similarly, discriminant validity is also established, as exhibited by the Heterotrait-monotrait ratio (HTMT) values in table 15.

Table 15. Discriminant validity

	CI	Instr.	ILnS	M	PI	LSC
French						
Cultural Interest (CI)						
Instrumentality (Instr.)	0.417					
Ideal Ln Self (ILnS)	0.793	0.710				
Milieu (M)	0.341	0.519	0.636			
Parental Influence (PI)	0.197	0.320	0.374	0.483		
Linguistic self-confidence (LSC)	0.310	0.219	0.460	1.296	0.343	
English						
Cultural Interest						
Instrumentality	0.193					
Ideal Ln Self	0.611	0.354				
Milieu	0.236	0.451	0.571			
Parental Influence	0.218	0.348	0.199	0.343		
Linguistic self-confidence	0.238	0.109	0.279	1.582	0.311	

Although the main goal is to study the interconnections between the different constructs in the motivation questionnaire and not to test predictive power, the model fit was evaluated using SRMR and VIF. The computed SRMR values for the French and English motivation models were 0.072 and 0.076 respectively, which is below the recommended threshold of <0.08 (Hair et al., 2019a). The VIF values were also below the critical threshold of 3. This means that both models demonstrate a good fit to the data.

To illustrate the strength of the relationships among the motivational dimensions explored here, standardized path models for both French and English are presented in Figure 8. Focusing on the direction and strength of the interactions, each model offers a visual representation of the connections between the constructs. Since the aim is to investigate the interconnections between motivational dimensions rather than test predictive power, only the path coefficients ( $\beta$ ) and significance levels (p-values) are reported (Appendix 8), excluding structural model fit indices (Hair et al., 2019b). While the PLS-SEM analyses (presented earlier in sections 4.8.1 and 4.8.2) capture all links between the motivational constructs, Figures 8a and 8b highlight only the strongest and most significant paths observed in the analyses, based on significance levels and standardized path coefficients. Both path models highlight the most robust relationships between dimensions, therefore visualizing the key motivational links that influence learners' intended effort.

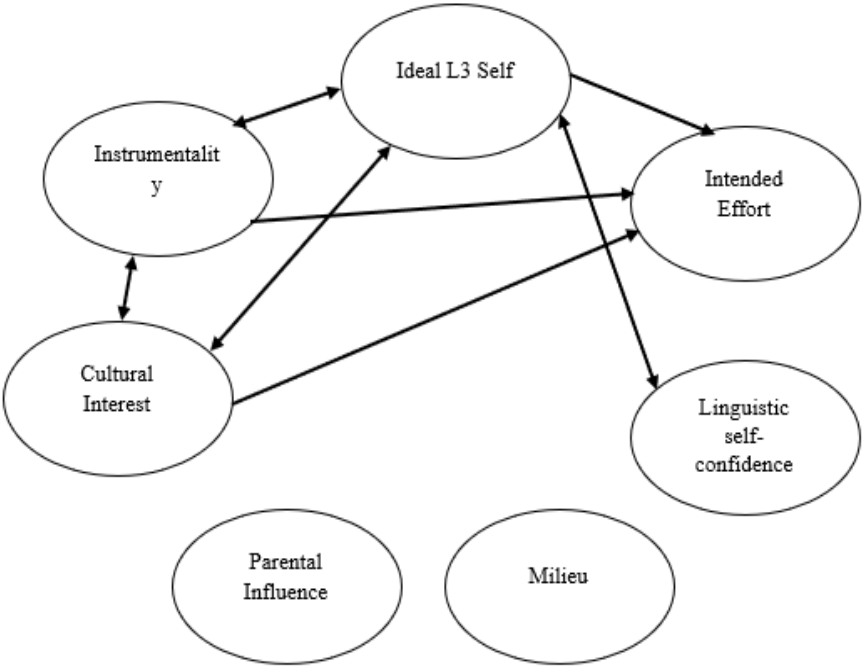


Figure 8a. Path analysis model for French motivation

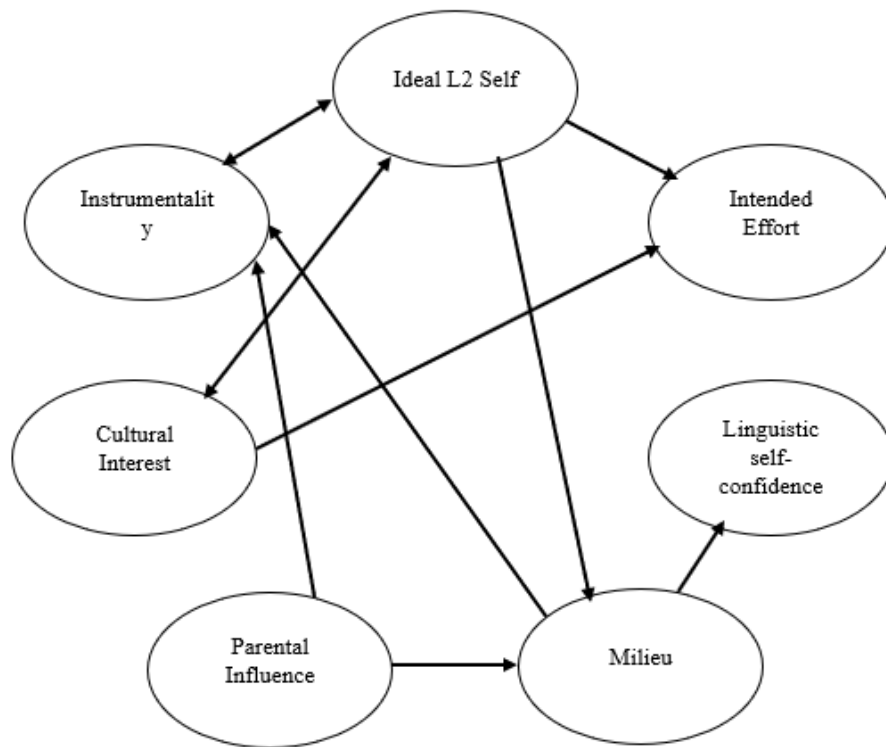


Figure 8b. Path analysis model for English motivation

Compared to the path model for French learning motivation (Fig. 8a), The English path model (Fig. 8b) demonstrates a more interconnected structure, where Parental Influence and Milieu play active roles in influencing motivational constructs. The ideal L2 self appears to be a key factor that is strongly associated with intended effort, cultural interest, milieu, and instrumentality. Additionally, instrumentality is linked to milieu, which in turn contributes to linguistic self-confidence, suggesting that learners' attitudes toward English are influenced by their learning environment and social context in addition to their idealized future selves. Ideal L2 self and cultural interest seem to be strong predictors of intended effort, indicating that learners show preparedness to invest effort in learning English based on intrinsic reasons. The presence of milieu in the English path model implies that external factors, such as the surrounding people's attitudes towards English learning, influence students' overall motivation. Similarly, parental influence is strongly present in the model, suggesting that students' perceptions of their parents' English proficiency and potential support for language learning play a significant role in shaping motivation.

The pathways in the French path model shows a slightly different structure. Remarkably, Milieu and Parental Influence do not appear to have a very significant role in shaping motivation, although the PLS-SEM analysis shows the interrelations of these variables with the rest of the constructs. This suggests that milieu and parental influence may have a weaker

influence on the other motivational dimensions. The model highlights that the Ideal L3 Self, cultural interest, and instrumentality are key predictors of intended effort. Ideal L3 self is also closely related to linguistic self-confidence, cultural interest, and instrumentality. Additionally, instrumentality and cultural interest show a more pronounced and direct connectedness compared to the English path model.

#### 4.9. The relationship between L2/L3 proficiency and the motivational dimensions

In order to study the connection between French and English proficiency and the six motivational constructs, together with the criterion measure, intended effort, a spearman's rho correlation analysis was conducted.

Table 16. Correlation between L2/L3 proficiency and the different motivational dimensions and criterion measure

		French proficiency	English proficiency
Ideal Ln Self	Correlation coefficient	.275**	.176*
	Sig. (2-tailed)	.003	.042
Instrumentality	Correlation coefficient	.145	-.040
	Sig. (2-tailed)	.094	.648
Cultural Interest	Correlation coefficient	0.14	.016
	Sig. (2-tailed)	.876	.854
Parental Influence	Correlation coefficient	-.103	.053
	Sig. (2-tailed)	.238	.543
Milieu	Correlation coefficient	.047	-.107
	Sig. (2-tailed)	.592	.219
Linguistic self-confidence	Correlation coefficient	.221*	.171
	Sig. (2-tailed)	.010	.048
Intended Effort	Correlation coefficient	.286**	.059
	Sig. (2-tailed)	.001	.5
N		134	134

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Ideal Ln Self and attitudes show a moderate positive correlation with French proficiency and a weaker but still significant correlation with English proficiency. This means that

learners who hold positive attitudes towards the language and desire to be similar to the target language speakers tend to have higher proficiency levels. Linguistic self-confidence has a moderately positive correlation with French proficiency and marginally with English, highlighting the role of self-belief and confidence in language learning and achievement. Intended effort also correlates significantly with French proficiency, suggesting that active investment in learning is related to and can be a key predictor of success in French. However, no significant relationship is found between effort and English proficiency, possibly as a result of increased exposure and earlier learning experiences in English. In contrast, Instrumentality, Cultural Interest, Parental Influence, and Milieu show no significant correlations with proficiency in either language. The correlation analysis highlights that the ideal Ln self, self-confidence, and effort can be important factors affecting language proficiency and key drivers of a successful learning experience.

#### 4.10. The relationship between the unfamiliar language test scores and the motivational dimensions

Table 17. Correlation between Italian test scores and Linguistic self-confidence

		Italian test	Linguistic self-confidence
Spearman's rho	Italian test	1.000	.278**
	Correlation coefficient		.001
	Sig. (2-tailed)		
	N	134	134

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis shows a moderate positive relationship between Italian test scores and Linguistic Self-Confidence ( $r = .278$ ,  $p = .001$ ), suggesting that any increase in linguistic self-confidence tends to be linked to an increase in the unfamiliar language test. This implies that learners who feel more confident in their overall language skills tend to perform better in decoding the unfamiliar language system. This suggests that learners' reliance and use of metalinguistic and crosslinguistic abilities might be influenced by their self-perceived linguistic competence. However, no other correlations were found between Italian test scores and the rest of the motivational dimensions.

## Chapter 5. Discussion

### 5.1. Multilingual awareness and the strategies employed to decode the unfamiliar language

While the limited body of MLA and XLA research has shown their involvement in the comprehension of a new and unfamiliar language system, the data generated by the current study provides a clear understanding of learners' strategic processing of an unfamiliar language and their meta- and crosslinguistic reflections that support the decoding process. The statistical analysis of the qualitative data revealed that the respondents drew on their previously learned languages during the decoding process, particularly French and English. L1 Hungarian was predominantly inactive and had little to no obvious influence on the decoding of the unfamiliar language system. This can be explained by the typological distance between Hungarian and Italian as reported by several students. These findings confirm the results of Gibson and Hufeisen (2003) and Mieszkowska and Otwinowska-Kasztelanica (2015) who found that L1 might not be influential in learning a language beyond L2 if it is not perceived as similar or close enough to the target language. French was predominantly seen as the strongest source for crosslinguistic comparisons, aiding the decoding of the new language system. However, English has played a significant role in deciphering the texts, among participants who felt most confident in their English language skills. Learners' awareness of the typological distance between their known languages and Italian clearly shaped their "view of the appropriate language source" for crosslinguistic consultations (Mieszkowska & Otwinowska, 2015, p. 217). The closer the relationship between languages, the more crosslinguistic interaction (Mieszkowska & Otwinowska, 2015). Most of the students who performed poorly in the unfamiliar language test did not perceive any similarities between their previously learned languages and Italian. Qualitative data analysis shows that the participants' metalinguistic reasoning and search for crosslinguistic equivalences between languages led to higher scores on the unknown language test, supporting the notion that bi- and multilingual education enhances metalinguistic awareness and thus the ability to decode an unknown language, which is consistent with the findings of Ter Kuile et al. (2011). On the other hand, English was perceived as very helpful providing the utmost aid at times as students who heavily relied on their English language knowledge to decode the text passages felt more confident in their English proficiency which influenced their choice of the main source for crosslinguistic reflections.

The qualitative data showed the participants' ability to draw on certain dimensions of their background linguistic knowledge when deciphering the Italian language. This was particularly pronounced in their use of lexical, syntactic, and phonological similarities between their known languages and the novel language, to interpret unfamiliar structures. Their reliance on contextual cues is also notable, proving their ability to strategically integrate prior linguistic knowledge with situational information to infer meaning. This approach corroborates reading comprehension research findings, which highlight that contextual cues serve as anchor elements and strong reference points, enabling learners to construct meaning (Oclarit & Casinillo, 2021) even in unfamiliar language contexts. Based on the qualitative analysis, multilingual abilities and reliance on prior language knowledge acted as a catalyst in the decoding process of the novel language system, which converges with the findings of Spechtenhauser and Jessner (2024) who concluded that learners with high MLA could effectively use these abilities, along with cross-linguistic reasoning and prior language experience, to decode novel and unfamiliar languages.

The multilingual learners in this study showed lexical awareness as they noted similarities and differences between their known languages and Italian. Students showed awareness at the level of noticing and understanding, recognizing forms and meaning of items in the text. Their search for crosslinguistic equivalences depending on prior linguistic knowledge demonstrates their explicit awareness of the similarities between their languages and the novel language system. Identifying items similar in form and meaning to French and to English indicates their metalinguistic reasoning and active engagement in comparative analysis between known languages and Italian. Two students even reported using their basic knowledge of Spanish to decode the texts passages, given the lexical similarities between these two Romance languages. Cognates are explicitly mentioned by students as a key component of comprehension. The effectiveness of cognate recognition is further demonstrated by learners' ability to translate words, phrases, and entire sentences from Italian to their known languages. The French-Italian lexical overlap emerged as the strongest facilitator, as both languages have Latin origins and belong to the Romance language family, hence sharing a large number of cognates. This is in line with research on crosslinguistic influence, which stresses how learners activate prior linguistic knowledge to decode and understand unfamiliar languages, especially when a degree of typological similarity exists (Spechtenhauser & Jessner, 2024). Furthermore, more similar cognates across the languages involved yielded a stronger cognate facilitation effect compared to cognates with less crosslinguistic overlap in orthography,

which was also observed by Mulder et al. (2015) Otwinowska and Szewczyk (2017) and Otwinowska et al. (2020). Typological proximity between languages is essential for understanding cognates in an unfamiliar language (Berthele, 2011). Muñoz (2020, p. 146) emphasizes that “instruction designed to raise cross-linguistic awareness of cognates helps school learners recognise similarities between words [...] which can boost learners’ vocabulary” and target language proficiency. This implies that learners, provided instruction in metalinguistic awareness of crosslinguistic similarities, can learn additional languages better and enhance their vocabulary in the target language faster (Jarvis & Pavlenko, 2008; Otwinowska, 2015). An innovative multilingual education can be achieved through cognates, as making students aware of crosslinguistic similarities enhances multilingualism and foster communication across linguistic and cultural bounds, as demonstrated by Uzun (2024). While French was the primary source for crosslinguistic comparison, English considerably contributed to lexical transfer. Considering the strong Latin influence on English vocabulary, the participants were able to identify a significant number of Italian-English cognates that aided comprehension and supported the decoding process. Learners’ awareness of cognateness between English as a Germanic language and Italian as a Romance language shows their ability to recognize and process orthographic and semantic similarities across languages that are not immediately related, underpinning the idea that multilingualism promotes linguistic thinking and transferable metalinguistic abilities (Dolas et al., 2022; Hofer & Jessner, 2016; Rwamo, 2021).

While cognates served as a strong decoding strategy, the results also show that a number of students were misled by false cognates, revealing a gap in their processing of lexical items. Although cognate recognition immensely aided comprehension, over-reliance on phonological and orthographic similarities has resulted in inaccurate inferences. This was especially apparent in participants with lower proficiency in French, which might have hindered their ability to distinguish between true and false cognates. For instance, learners incorrectly equated the Italian word *libri* (books) with French *libre* (free), while *biglietto* (ticket) was misinterpreted as *bicyclette* (bicycle). These errors indicate that students relied more on surface-level word resemblance rather than deeper semantic processing or contextual cues, leading to misinterpretations. In this regard, Möller & Zeevaert (2015) studied the factors that may influence the recognition of cognate words among German L1 speakers reading in unknown Germanic languages. The results showed that the most significant clue is the phonetic similarities presented between different segments in isolated cognates. However,

when presented with a context, semantic probability seemed to override intuitions about phonetic similarity, which is evident in most of the participants' reflections in the current investigation. Proficiency in the source language also plays a crucial role in successfully navigating crosslinguistic influences and thus identifying cognates (Swarte, Schüppert & Gooskens, 2015), since higher proficiency enables learners to effectively activate and regulate linguistic knowledge. Therefore, these errors observed in inferencing could be explained by incomplete lexical representations in French, where learners had not yet fully developed the ability to distinguish between cognates and false cognates.

The participants' ability to identify lexical similarities between their known languages and Italian went beyond cognate recognition to include morphological awareness, as evidenced by their accurate translation of plural nouns and verb conjugations. Many students demonstrated their understanding of crosslinguistic morphological patterns by accurately identifying plural nouns, such as *persone* (plural of *persona*) – *personnes* (plural of *personne*) [people], *anni* (plural of *anno*) – *ans* (plural of *an*) [years], and *viaggiatori* (plural of *viaggiatore*) – *voyageurs* (plural of *voyageur*) [travelers]. Participants were also able to recognize verb inflections, as evidenced by their translation of *frequentano* (3<sup>rd</sup> person singular: *frequenta*) – *frequentent* (3<sup>rd</sup> person singular: *frequente*) [they frequent/attend], *abita* (3<sup>rd</sup> person plural: *abitano*) – *habite* (3<sup>rd</sup> person singular: *habitant*) [he/she resides/lives], and *vivono* (3<sup>rd</sup> person singular: *vive*) – *vivent* (3<sup>rd</sup> person singular: *vit*) [they live]. This suggests that participants were aware of grammatical regularities across languages and were not solely relying on direct lexical matches. Contextual cues might have also been helpful in figuring out the correct suffixes to add during translation. Such findings are in line with prior research on the process of decoding unfamiliar languages which highlight how multilingual learners rely on inflectional and derivational morphology and apply morphological analysis to decode key terms when processing an unfamiliar linguistic system (Mieszkowska & Otwinowska-Kasztelanic, 2015). Furthermore, learners' implicit and at times explicit knowledge of French language structures is reflected in the accuracy of their translations, especially in pluralization and verb endings. This supports the notion that typological proximity facilitates morphological processing in multilingual learners. Morpho-syntactic awareness thus enabled learners to apply structural rules, which further supported them in understanding the Italian texts and translating phrases and sentences correctly. This indicates a heightened degree of metalinguistic reasoning, where participants not only recognized lexical similarities but also engaged in crosslinguistic comparisons at the morphological level.

Moreover, students with higher scores on the unknown language test showed awareness of grammatical similarities between their L2-L3 and Italian. Their comments reveal their awareness of grammatical structures which has long been documented in the literature, as grammaticality judgement tasks have often been used to assess metalinguistic awareness (e.g., Atar, 2018; Renou, 2001; Robinson, 1995). As both French and Italian are Romance languages, they share several grammatical features including the Subject-Verb-Object (SVO) word order, which facilitates the understanding of an unfamiliar language system from the same language family. On the other hand, while English is a Germanic language, it also follows an SVO sentence structure due to the Latin influences that have occurred in the Middle English period. Reflecting on the Italian word order, therefore, demonstrates participants' metalinguistic awareness and shows an understanding of prior language learning and knowledge experience. The reference to sentence structure aiding comprehension implies that the students are not only aware of individual lexical items but also how words are arranged to form grammatically correct sentences. In both Smidfelt and Van De Weijer (2019) and Spechtenhauser and Jessner (2024), multilingual participants made explicit grammatical reflections on the similarities between the unknown language they were confronted with and their prior linguistic knowledge, which helped them decode a significant number of items and chunks. This increased awareness of grammatical structures suggests a high level of MLA. Additionally, the cognate facilitation effect which posits that cognates are recognized and processed faster than non-cognates, arguably as a result of crosslinguistic activation, might have had direct implications for recognizing the structural similarities between the languages involved (Sanahuja & Erdocia, 2024). This facilitatory effect is consistent with the Lexical Bottleneck Hypothesis (Hopp, 2014) which postulates that the cognitive cost associated with L2 lexical processing can affect syntactic processing. In this sense, it is suggested that cognates might alleviate the demands on lexical processing, allowing for more resources to be allocated for successful structure building (Sanahuja & Erdocia, 2024). Hence, the participants' recognition of cognates might have facilitated the structural processing of the new language. Similarly, in Smidfelt and Van De Weijer (2019), Swedish upper secondary school students were required to translate a text from Italian, a language unknown to them, into either their L2 English or their L3 French or Spanish. Their reflections on the translation process showed that recognizing certain cognates helped them focus on the sentence structure to infer meaning of the whole sentence. Identifying familiar lexical items and cognates in Italian, drawing on French and Spanish knowledge, some learners were able to break down words into meaningful morphemes, such as recognizing

shared roots, which demonstrates their metalinguistic awareness. Therefore, as is the case in the current study, the participants' reflections on word order and verb conjugation patterns suggest their reliance on grammatical awareness to make sense of Italian sentence structures, particularly through crosslinguistic comparisons with French and at times English.

Similarly, the participants' reflections on the similarities in the sound system and pronunciation between Italian and French highlight their phonological awareness. Phonological awareness refers to the recognition and manipulation of sound units across languages and plays a central role in reading and language processing (Milankov et al., 2021; Zugarramurdi et al., 2022). An implicit phonological processing, occurring during the silent reading (Clifton, 2015), helped participants recognize words with familiar phonological forms, even in the absence of formal phonetic instruction in Italian. This suggests that crosslinguistic phonological activation was at play, allowing participants to decode Italian pronunciation patterns using their existing French phonological knowledge. These explicit reflections on phonological similarities suggest the use of orthography-to-phonology mappings (Otwinowska & Szewczyk, 2017) from known languages, in this case French, to phonemically decode the Italian words. Since phonological transparency is notably high in Italian as a predictable letter-to-sound correspondence is most likely, participants were able to transfer their L3 French phonological knowledge to the unfamiliar language. Studies have shown that phonological transfer is particularly prominent among languages that are (psycho)typologically close (Bardel & Linqvist, 2007; Smidfelt & van de Weijer, 2019) and might share prosodic and segmental features. This explains why participants in this study commented on the phonological similarities between French and Italian. As phonological awareness is fundamental to proficient decoding (Schuele & Boudreau, 2008), recognizing similarities in pronunciation between a known and an unfamiliar language further highlights the participants' use of phonemic awareness to decode the sound system of the new language, and, therefore, decode the meaning of the words in the text passages.

Multilingual learners often rely on phonological similarities as a strategy to decode and understand an unfamiliar language (Smidfelt, 2018; Smidfelt & van de Weijer, 2019). This strategy lessens the cognitive load during the decoding process by allowing learners to make educated guesses about pronunciation and meaning. Their ability to identify phonological similarities, even in the absence of explicit training, implies that their phonological representations of French influenced their perception of Italian sounds, which highlights the interconnected nature of multilingual phonological processing. The participants were able to

leverage their multilingual background to comprehend the Italian language, as they drew on prior phonological knowledge to identify patterns across languages. This is consistent with research positing that multilingual learners develop high phonological awareness as bilingual and multilingual language learning experience promotes heightened phonological sensitivity to the structural commonalities and differences between languages, which enhances learners' ability to process and learn new languages (Kuo & Anderson, 2010). Hence, the participants' reflections on phonological similarities further evidence that multilingual awareness promotes successful language learning and enhances learners' ability to make crosslinguistic connections at the phonemic level. In this light, Cabrelli and Pichan (2021) assert that phonological transfer is determined by global structural similarity between the target language and the source language(s), which aligns with the Typological Primacy Model (TPM).

## **5.2. L2/L3 proficiency and decoding the unfamiliar language system**

Understanding the role of second and third language proficiency in deciphering a language that learners have never encountered/studied before is pivotal to studying how multilingual learners employ their linguistic resources in understanding unfamiliar languages. In this study, the relationship between participants' L2 and L3 proficiency and their ability to decipher short texts in an unfamiliar language, Italian, was examined to investigate how proficiency in background languages and multilingual awareness interact in comprehending Italian. Huang (2016) posits that higher L2 proficiency should endow learners with higher MLA, allowing them to decode an unlearned L3. In the same vein, Swarte, Schüppert and Gooskens (2015) demonstrate that L2 German proficiency plays a key role in translating words from Danish, an unknown language to the learners, into L1 Dutch. In my study, given the (psycho)typological proximity between French and Italian and the presence of English as the de facto global language that is more dominant in learners' everyday lives, each language offers different avenues through which transfer might occur and awareness could be shown.

Exploring the difference in performance across the French and English proficiency tests, the study findings show that participants performed noticeably better in the English language proficiency test across all sections, compared to French. This might be due to their educational background, where English is often learned earlier in primary school and is a global language that has been more widely used in media and academic contexts. This is further highlighted by their self-reported data on the contributing factors in their English language learning where the results revealed that watching TV, video-based platforms, social media, and video-streaming platforms as well as reading are the most important contributing

factors to English learning. This suggests that English-language media exposure is crucial in developing learners' English language skills. Literacy-based activities also appear to be cardinal in L2 development. In contrast, reading and autonomous study according to the participants are the primary contributing factors to French learning while media exposure received moderate ratings. This relative paucity of language exposure, beyond the classroom environment, might in part elucidate the comparatively lower French proficiency scores. Exposure to greater input usually leads to more successful language achievement as in the case of English, where proficiency is perhaps acquired and knowledge may be gained largely extramurally. However, the limited presence of French in the participants' immediate linguistic environment, compared to English dominance, precludes the kind of continuous input and incidental learning that are frequently made possible by rich, authentic media exposure. This emphasizes the importance of out-of-school exposure in language learning which has been gaining ground in recent years. These findings are in line with Peters and Webb (2018) who claim that viewing TV results in incidental vocabulary learning at the level of meaning recognition and meaning recall, proving that L2 words can be learned incidentally through exposure to audio-visual input. Peters (2020) found a positive correlation between out-of-class exposure to English language media, including TV programs and movies, Internet, and written print like books and magazines, and vocabulary knowledge. In a similar vein, González Fernández and Schmitt (2015) found significant positive correlations between everyday exposure and collocation knowledge. The present study's results support these studies that underscore the pivotal role of media exposure, including TV programs and movies, video-based and streaming platforms, as well as reading, in foreign language learning and development. Such immersive exposure to authentic input promotes incidental vocabulary learning, enhances listening comprehension, and reinforces phonological and grammatical patterns. In the current study, the lower scores in French, particularly in the grammar section, suggest that participants may have less formal mastery of grammatical structures in French compared to English, which might be in part attributed to the limited exposure to French language media in light of the dominant presence of English in the participants' daily lives.

Studying the connection between L2-L3 proficiency and the ability to decode Italian, the data analysis supports the positive relationship between multilingual awareness and French and English proficiency. Although the relationship between the two constructs is not robust, any increase in L2-L3 proficiency is accompanied by an increase in multilingual awareness. In fact, the relationship between French, the participants' main language of instruction in the

French program, and scores on the Italian reading comprehension test is more significant. These findings suggest that the development of MLA is connected to language proficiency, which is in line with Renou's (2001) study showing the strong relationship between proficiency and MLA levels in adult learners of French. This is further confirmed by the multiple linear regression analysis, which reveals that language proficiency can be a predictor of learners' MLA performance. Learners with a stronger foundation in French might have found it slightly less challenging to draw on their French knowledge to identify cognates, grammatical structures, and lexical patterns in Italian. Higher English proficiency also provided an advantage in the decoding process, although both languages belong to different language families. Results from the retrospective questionnaire showed that participants with lower proficiency in L2-L3 tended to use fewer strategies and often failed to understand the reading texts. On the other hand, most participants with a higher L2-L3 proficiency showed a more developed meta- and cross-linguistic awareness, as they were more inclined to look for lexical, phonological, and structural similarities (cf. Smidfelt & Van De Weijer, 2019). The findings highlight that the development of meta- and crosslinguistic awareness, which is necessary to solve challenging language tasks, progresses in parallel with the development of L<sub>n</sub> proficiency (Mieszkowska & Otwinowska-Kasztelanic, 2015).

### **5.3. On the importance of English in further language learning**

#### **5.3.1. English as the dominant foreign language**

The data analysis has shown the participants' inclination towards using English in communication in their everyday lives. Their preference to talk to people who speak all three of their languages in English highlights their comfort and confidence in using English rather than French for communication in multilingual settings, even though they are enrolled in a French bilingual program. However, the participants' preference for Hungarian might be attributed to its status as a native language which naturally offers an optimal level of comprehension, fluency, and effortlessness in processing. Additionally, they are exposed to Hungarian more frequently on a daily basis, which reinforces its dominance in reading preferences. The participants' preference for English over French could be explained by their increased exposure to English-language media and digital content, as well as its presence as a global language. Despite being the main language in the bilingual curriculum, French appears to be the least preferred language when compared to Hungarian and English. This is probably due to lack of linguistic self-confidence, lower competency levels, and less exposure to French. The findings show that media exposure through TV, social media, and reading plays a

significant cardinal role in participants' English language learning and development. Watching TV and videos on different platforms and social media alongside reading are reported to be the most contributing factors to English language learning, implying that participants acquire English primarily through media as well as literacy-based exposure. This is in line with earlier research underscoring the importance of incidental language learning through audiovisual input and written materials, which offer possibilities for authentic language use, vocabulary exposure, and contextual learning (Peters, 2019; Rodgers & Webb, 2020). There is mounting research evidence that incidental vocabulary learning occurs through watching TV or videos. Watching short video clips (Puimége & Peters, 2019), full-length TV programs (Peters & Webb, 2018), and extensive TV viewing (Rodgers & Webb, 2020) can help learners pick up foreign language vocabulary quite unintentionally. Muñoz et al. (2023) conclude that audiovisual input and multimodal input, i.e., the combination of images and verbal information in audio-visual input, which can also be enhanced by the addition of caption text can support learners' L2 vocabulary and grammar constructions. Video captioning has also proven to have a major effect on incidental vocabulary acquisition (Teng & Cui, 2023). Additionally, it has been demonstrated that incidental vocabulary learning can occur through reading (Teng & Mizumoto, 2024; Webb & Chang, 2015, Webb & Chang, 2022). Teng (2024) investigated incidental vocabulary learning from different input modes to conclude that reading serves as a valuable input mode for L2 vocabulary acquisition. He posits that reading provides learners with an opportunity of exposure to a wide range of vocabulary in different meaningful contexts. Learners would develop a deeper understanding of word meanings and form-meaning connections, through exposure to words in a variety of syntactic and semantic contexts. "[R]eading [also] provides opportunities for repeated encounters with words, which can reinforce vocabulary retention and consolidation" (Teng, 2024, p. 23). Regarding listening as an input mode for incidental vocabulary learning and retention, research studies have proven that audiovisual input, multimodal input, and reading provide better opportunities to learn novel words and expressions (Teng, 2024; Van Zeeland & Schmitt, 2013; Vidal, 2011). Written input appears to be more effective than spoken input when processing pertinent information for incidental word learning, which can be explained by the demands of comprehension through spoken input, misalignment between speech rate and word processing ability, and limited text-processing proficiency during listening (Teng, 2024). In fact, it is established that "[a]udiovisual input has three advantages compared to written and spoken input: (1) it is motivating, (2) it contains visual support, and (3) it recycles low-frequency words" (Peters, 2019, p. 20). Overall, the current study findings suggest that audiovisual input

through exposure to media and reading are significant sources of linguistic input, notably in contexts where English is learned as a foreign language with very restricted opportunities for immersive interaction.

Interacting with friends and family in English also contributed to learners' language development as evidenced by participants' self-reported data. This is consistent with studies underlining the importance of social interaction in language learning, where frequent engagement in genuine, real-life conversations fosters vocabulary development, pragmatic competence, and general language fluency (Bushati et al., 2023; Verga & Kotz, 2013). In contrast, interaction with friends and family played a less significant role in learning French as compared to English. This could be explained by the dearth of opportunities available for learners to use French in social contexts, either due to a lack of self-confidence speaking the language or the absence of people in their immediate environment who are proficient in French, which reflects the language's lower social presence outside of the classroom. Prior research (e.g., Bushati et al., 2023; Peters, 2020) on out-of-class interaction and exposure highlights the importance of language presence and integration into a learner's social network in language learning and development. Therefore, the dominance of English in informal contexts and its use in the school setting appears to be influential in developing the language perhaps more effectively than French which is mostly present in the classroom environment.

### **5.3.2. The facilitating role of English as the primary source of transfer in the decoding process: linguistic self-confidence as a catalyst for transfer**

The prominence of English in the global linguistic landscape and its growth as a de facto universal language has been reinforced by learners' perceptions of its usefulness, ubiquity across various fields and different media, and accessibility. In the present study, English has emerged as an important language of reference that supported the decoding process. It has also been reported as the primary source for crosslinguistic comparisons by a number of participants who expressed their heightened linguistic self-confidence and sustained exposure to English through various media and social interactions. The perceived comfort and familiarity with English appear to have contributed to its dominant role in the decoding process where frequent use of and exposure to the language may have deepened participants' procedural fluency and fostered linguistic retrieval. Additionally, the English vocabulary, significantly influenced by Latin, has facilitated recognition of cognates and aided the understanding of unfamiliar Italian expressions. While (perceived) typological proximity between the languages involved, as expounded in the Typological Proximity Model

(Rothman, 2015), would predict a greater reliance on French, participants' increased confidence in and frequent use of English seemingly outweighed structural similarities. In this light, prior research has indicated that linguistic confidence is an important predictor of L2 language-based problem-solving skills and foreign language ability in general (Choi et al., 2020; Clément et al., 1994). Linguistic self-confidence and self-perceptions of L2 knowledge and competence appear to be essential in determining L2 achievement and by extension the extent to which learners would rely on it to decipher or learn a novel language. These observations underscore the intricate, interwoven relationship between affective variables (linguistic confidence and familiarity), linguistic experience, and transferability in multilingual processing and learning, implying that subjective perceptions of one's language systems in a multilingual system may influence crosslinguistic strategies and mediate transfer.

Drawing on Arnett's (2002) work on the psychology of globalization, it has been posited that most people tend to develop a bicultural identity that combines their local identity with an identity rooted in the global culture. The language associated with the global culture is English which is now considered as the language of the world rather than the language of any particular Anglophone country (Csizér & Lukács, 2010). The dominance of English in the 21<sup>st</sup> century and its influence on the global economic and linguistic landscape, political configurations, and cultural systems (Zeng & Yang, 2024) have facilitated the development of a global culture that English language learners identify with. This English linguistic hegemony has been observed through the study's self-reported data where the majority of participants have expressed a stronger sense of identification with the culture of the English-speaking nations, in contrast to French which elicited a slightly weaker cultural connection. Although participants primarily identified with their native Hungarian culture, favoring and connecting more to English compared to French, the language of instruction, with regard to cultural identification demonstrates the expansive reach of English, particularly due to the prevalent influence and dominion of American and British institutions in the fields of science, technology, education, entertainment, media, international relations, and commerce. This suggests that English, for these students, is not only a mere medium of communication but also a symbol of a broader cultural identity they associate with. Against this backdrop, the cultural affinity for English has influenced participants' cognitive and affective orientations towards the language, bolstering its status in their linguistic identity and consequently promoting a heightened linguistic self-confidence. English in this sense served as a psychologically secure and readily accessible source of transfer during the decoding process,

especially that it has been influenced by Latin and Romance languages which enhances its facilitatory role in comprehending Italian.

Given that numerous participants primarily relied on English due to their reported self-confidence in the language which appeared to be more automatized and readily accessible compared to French, Sweller's (2015, 2017, 2023) Cognitive Load Theory may offer a gripping explanation: learners tend to rely on deeply ingrained knowledge structures stored in long-term memory when processing new information. Sweller (2017) posits that the more information pertaining to L2 that is stored in long-term memory, the better a learner is able to use that language. Hence, based on the participants' comments, English, having been learned earlier and more frequently used in out-of-class contexts, offers an expansive network of linguistic schemas that learners might be confident to use during the decoding process. The participants' familiarity with English phonology, orthography, and vocabulary, particularly through frequent exposure to English language media, social interaction, and instruction, might have strengthened the proceduralization of knowledge, rendering English a low-effort, easily accessible language tool used deciphering Italian. By mostly referring to English to comprehend the Italian texts, learners effectively reduce unnecessary working memory load (Sweller, 2015). This automaticity, effortlessness, and confidence in using the language both facilitate retrieval and enable learners to circumvent the cognitive bottlenecks often encountered when processing a novel language.

Given the central role that linguistic self-confidence played in participants' reliance on English as a primary source of transfer during the decoding process, it is imperative to recognize self-confidence as a fundamental facilitator of linguistic performance and crosslinguistic transfer, rather than just as an affective byproduct of language learning. Learners with high levels of self-confidence in a particular language are more likely to access and use that language in challenging or unfamiliar contexts inasmuch as self-confidence is a dominant factor in L2 acquisition and a fundamental construct in students' learning motivation that can help reduce language anxiety (Clément, 1986). In this light, Wu et al (2024) researched Chinese students' motivation towards English medium instruction (EMI) courses with a special focus on the effect of linguistic self-confidence, among other variables, on EMI learning. The results revealed that linguistic self-confidence is a significant predictor of EMI motivation, highlighting its crucial role in bringing about positive EMI motivational orientations and in succeeding, in general, in linguistically demanding academic environments. Wu et al. (2024) concluded that it is fundamental for teachers and policymakers

to be “heedful of students’ appraisal of their language competence and consider boosting learners’ linguistic confidence as an integral part of motivation promotion strategies” (p. 1272). Raising students’ self-confidence using activities related to the category of self-esteem (Yousefabadi et al., 2022) fosters a more successful language learning experience by creating a psychologically supportive environment where learners can engage with new linguistic input and employ internal linguistic resources more effectively. In the current study, some students’ reliance on English as a primary language of transfer to comprehend Italian can be indicative of their reduced anxiety and increased self-confidence in that language, making it a safe and reliable source when deciphering unfamiliar structures. Therefore, boosting linguistic self-confidence can be viewed as a catalyst for deeper linguistic processing, transfer, and successful understanding of unfamiliar language systems.

## **5.4. Language motivation and attitudes**

### **5.4.1. Differences in motivational dimensions across the original and current motivation model: English vs French**

The present study explored Dörnyei and Csizér’s (2006) motivation model, revealing a number of significant differences in the dimensional structure of language learning motivation for both French and English. While the original model, developed from a large-scale study conducted across multiple national contexts, identified seven key dimensions, namely Integrativeness, Instrumentality, Vitality of L2 Community, Attitudes Towards L2 Speakers, Cultural Interest, Milieu, and Linguistic Self-Confidence, the factor structure that emerged from the current investigation unravels a somewhat different motivation model shaped by educational, contextual, and sociolinguistic circumstances. The final suggested model consists of Cultural Interest, Instrumentality, Ideal L2/L3 Self which combines Integrativeness and Attitudes towards L2 speakers, Parental Influence, Milieu, and Linguistic Self-Confidence.

Cultural Interest includes variables consistent with earlier research (Dörnyei, 2005, 2009) that emphasizes indirect exposure to a language through cultural content as a key motivational component. Learners’ engagement with and appreciation of L<sub>n</sub> media, entertainment, and cultural products might mediate L<sub>n</sub> learning success through providing contextualized input and “familiarizing learners with the L2 community and thus shaping their L2 attitudes” (Csizér & Dörnyei, 2005, p. 21). Learners’ appreciation of the L<sub>n</sub> cultural products and artifacts may cultivate favorable attitudes towards the L<sub>n</sub> community, strengthening integrative tendencies and promoting L<sub>n</sub> learning success. This is in line with prior research by Clément et al. (1994) who examined various motivational dispositions in a largely

monolingual Hungarian context and identified English media as a component encompassing the consumption of cultural products in English. Their investigation underscores the cardinal role that L2 cultural products play in familiarizing learners with the L2 community and in shaping their attitudes. Csizér and Kormos (2009) conclude, in their study on the role of intercultural contact of learning English as a foreign language in the Hungarian context, that the consumption of foreign language media products is crucial in developing positive attitudes towards the target language and its community. They propound that contact through cultural products enhances language learning attitudes and plays a salient role in deepening learners' connection to the language, its speakers, and its culture. This exposure to cultural products including films, music, TV programs, and video-based and video-streaming platforms might stimulate a profound interest in language learning, promote learners' motivation, and contribute to the development of more positive attitudes towards the target language community. The participants' heightened exposure to and appreciation of English-language media, compared to French, is evident since English is now a global language and an international lingua franca that functions as a global communication medium and a means of participation in global culture. Given its omnipresence across streaming platforms, social media, and educational resources, English has become the default medium for accessing cultural and informative content, which explains the participants' increased interest in and exposure to English cultural products. This ubiquity supports its status not only as global communication tool but as the language that offers connectivity, career and academic opportunities and through which the world now consumes entertainment, learns, and interacts online. Overall, by situating the target language within immersive, rich, and engaging cultural contexts, learners might perceive language learning as a motivating and meaningful process.

Instrumentality remains a stable construct in both the original and current model, reflecting the pragmatic value of language learning. This is in line with research highlighting the extent to which economic mobility and globalized labor markets can shape language motivation (Ryan & Dörnyei, 2013). Although the scope of this factor appears slightly narrowed in the present study compared to the original model, it still encompasses fundamental elements related to career advancement, academic achievement, and perceived importance and utility of the target language in the world. The participants' awareness of the social and economic opportunities associated with both French and English knowledge, particularly in an increasingly interconnected and global environment, appears to be a key component in sustaining learning motivation. In the present study, instrumentality emerged as the strongest

motivating factor behind learning both languages, with the participants showing more instrumental motivation towards learning English compared to French. Although French plays a central role in their Hungarian-French bilingual program, the students appear to attach more value to the pragmatic benefits of English, perceiving it not merely as an academic subject or a foreign language but as a vital means for accessing future opportunities. The participants' perspectives on English are in line with studies that have demonstrated the utility of the language with regard to economic mobility, global connectivity, academic advancement, and personal development (Cho, 2017; Hashemi & Hadavi, 2014; Ruane, 2021). This increasing instrumental orientation towards English may be explained by the prevalence of English as the language of science, technology, global media, and digital platforms, as already reinforced by a number of participants who highlighted its omnipresence across various fields, as well as its dominant position as an international lingua franca and a core educational skill (Ushioda, 2020). In this vein, Csizér and Albert (2024) found, in their study investigating motivation, emotions, and learning autonomy in Hungarian high school students, that learners often attach a fairly high level of importance to using English outside the classroom, indicating their awareness of the practical value of English in Hungary. The authors reported that students' perceived importance of out-of-class English usage contributed to their language learning autonomy, which might explain students' reported higher level of English self-instruction, compared to French, in the current study. English, being more embedded and used in their everyday communication with friends or family, might have fostered their autonomous engagement with the language. French, on the other hand, is regarded by the majority of participants as confined to the classroom environment and primarily relevant in their immediate academic context.

The Ideal L<sub>n</sub> Self, merging items previously related to integrativeness and attitudes towards L<sub>n</sub> speakers/communities, taps into learners' emotional and aspirational connection to the language and its speakers. The Ideal L<sub>n</sub> Self includes items that, combined, reflect a vision of the self as a competent, involved, and culturally integrated user of the target language, which is an ideal students strive to attain. Taguchi et al. (2009) points out the interrelationship between the ideal L<sub>2</sub> self, which is the reinterpretation of integrativeness in Dörnyei's L<sub>2</sub>MSS, and attitudes to L<sub>2</sub> culture and community in a comparative study addressing language motivation in Japanese, Chinese, and Iranian students. The influence of attitudes to L<sub>2</sub> culture and community on the ideal L<sub>2</sub> self was very pronounced in their research. Martinović (2018) also posited that positive attitudes towards the L<sub>2</sub> community are

connected to one's idealized L2 speaking self. Learners with high integrativeness often envision themselves as competent L2 speakers, embodying the traits of L2 native speakers, while developing positive feelings and attitudes towards L2 community and culture is related to a strong Ideal L2 Self. This might suggest that integrativeness and attitudes merging as one factor can be different facets of the ideal L<sub>n</sub> self. This convergence of both factors supports the notion that the desire to become an ideal L<sub>n</sub> speaker is inextricably connected to emotive ties with the target language community. This construct becomes even more salient in multilingual contexts, where learners often align their idealized L<sub>n</sub> self-image with the language deemed more dominant, culturally accessible, and personally valuable. The Ideal L<sub>n</sub> Self emerged, in this study, as a strong motivating force behind learning both French and English, with participants developing similarly strong emotional connection to both languages. They seem to have formed parallel idealized self-images as speakers of both languages, showing a highly positive attitude towards both communities. While their ideal L2 self might be driven by the language's global status, perceived importance, and omnipresence in digital and media spaces, the ideal L3 self might be more reinforced by formal educational goals. In this vein, Adolphs, Klark, Dörnyei and colleagues (2018) explored the power of the Ideal L2 Self and its possible visualization through technology and revealed that learners' ideal L2 selves were strongly linked to their language goals in both academic and social contexts. Similarly, the participants appear to attach different goals to French and English; they envision themselves as competent users of English in broader, globally oriented contexts, while French seems to be perceived as important for their academic success. The emergence of similarly strong ideal L2 and L3 selves is in line with Henry's (2011) argument that multiple language-specific self-concepts can coexist and be maintained and that although L2 English motivation might possibly have a negative impact on L3 motivation, learners can counteract such influence by tuning in self-knowledge which can reaffirm their L3 speaking/using self-concept. Notably, the participants could sustain and protect their ideal L3 self from being eclipsed or overshadowed by a more dominant L2 especially given the importance of the L3 in their academic environment. The desire to achieve the required L3 competence, engage in classroom activities, successfully complete coursework, and perhaps grab more academic/work opportunities in the future appear to be crucial components in the participants' overall L3 self-concept. For the most part, the L3 self seems to be anchored in the participants' academic identity which explains the amount of effort they exert in learning the language. The potential fear of failure or feared L3 self as Henry (2011) explains became an important aspect of the idealized French-speaking self, reinforcing the commitment to

sustain strong L3 motivation. Overall, in the presence of a more dominant L2 English and a strong English-speaking ideal self, the participants were able to preserve an equally robust ideal L3 French self. This L3 self-concept is however prone to change in the long term if consistently subjected to challenge especially that cultural interest and instrumentality are higher for English and greater parental competence in English is observed. As Siridetkoon and Dewaele (2017) makes clear, the development of the ideal L2 and L3 selves is associated with a host of learner-internal and learner-external factors. Against this backdrop and as Henry (2020) maintains, an ideal multilingual self might emerge as a result of the interactions between learner-internal and learner-external motivational systems and when multilingualism is socially valued and promoted within the educational and social environment. In the present study's context, although the bilingual program is supportive of multilingual development, the scarcity of authentic communicative opportunities in French and the seemingly overall absence of a socially reinforced multilingual environment beyond classroom walls dampen the development of a full-fledged ideal multilingual self.

Parental Influence emerged as a new factor in this study, including learners' perceptions of their parents' Ln proficiency. This might reflect the perceived influence of parental language competence on motivation. In this regard, prior research suggests that parental influence including education level (Iwaniec, 2018), encouragement (Daniel et al., 2018), and beliefs (Van Mensel & Doconinck, 2019) about language learning can impact learners' motivation in learning second or foreign languages. The participants' perceptions of their parents' language proficiency might have influenced their instrumental motivation and the development of their ideal Ln selves. Seeing their parents as competent users of French and especially English might have reinforced their aspirations to become competent themselves. Proficient parents often demonstrate positive attitudes towards the target language and serve as role models themselves, establishing a supportive environment where language learning is valued (Gardner, 1985). Moreover, if parents are competent users of the target language, learners may internalize the belief that mastery is attainable, which can promote a sense of self-efficacy. Self-efficacy beliefs, defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391), are proven to have a positive effect on learners' motivated learning behavior. Learners are unlikely to carry out the requisite actions to acquire a foreign language unless they are certain of their ability to execute them (Csizér & Albert, 2024). In the Hungarian context, Piniel and Csizér (2013) and Csizér, Albert, and Piniel (2021) investigated self-

efficacy beliefs, at the secondary school level, with relation to L2 motivation, anxiety, and autonomy and concluded that the role of self-efficacy beliefs is crucial in shaping a positive language learning experience and in strengthening learners' motivation. Parents' competence in the target language might serve as a strong vicarious model that can contribute to learners' self-efficacy beliefs. Furthermore, parents' language practices can significantly influence learners' motivation; using the target language at home, expressing positive attitudes towards the target language and its speakers, and encouraging language learning efforts can play a salient role in shaping learners' motivation and attitudes. Chavez and colleagues (2023) point out that proficient parents who value the importance of a certain language, English in this case, are better able to support and reinforce learners' engagement with the target language through different personal approaches including conversational practice. In the present study, participants reported their perceptions of their parents' proficiency in English to be higher than in French which might have also contributed to their heightened motivation towards learning English. The emergence of Parental Influence as a distinct motivational factor reflects a generational linguistic shift where English has increasingly been viewed as the language of opportunities and success, replacing other languages as the dominant foreign language taught in schools. Parents' limited knowledge in French might have also influenced their children's choice to enroll in a French bilingual program, perhaps as a means to expand their linguistic repertoire.

Milieu, as another factor in the current motivation model, aligns closely with the original model advanced by Dörnyei et al. (2006). This construct captures the participants' perceptions of the extent to which their immediate environment values foreign language learning. Their significant others' attitudes towards languages appear to be of utmost importance in establishing and maintaining learning motivation. The persistence of this construct across both studies stresses the enduring influence of the social environment in language learning motivation (Csizér & Kormos, 2009; Wang et al., 2021). However, one remarkable discrepancy between the original and current factor is the bundle of items that loaded under each. The absence of item 28, related to whether learning foreign languages threatens learners' Hungarian selves, in the current model, suggests an attitudinal shift in the way foreign languages are perceived. This might indicate that younger generations in Hungary do not view language learning as a threat to their national identity but as a means to global connectivity, social mobility, and economic and personal growth. Milieu, as evidenced in previous research (Dörnyei et al., 2006; Kormos et al., 2011; Taguchi et al., 2009), appears to

be a fundamental motivating factor in foreign language learning in this study's context. Kormos, Kiddle, and Csizér (2011) contend that learners' milieu affects their perceived importance of contact as well as self-confidence insomuch that the immediate social environment's attitudes towards the language predict how crucial learners find meeting foreigners and how they view their potentials in language learning. In the current research, the participants' milieu is supportive and encouraging of foreign language learning, which further promotes a sense of validation and enthusiasm in their pursuit of additional languages. Compared to Dörnyei et al.'s (2006) original study, the participants' milieu, in this context, appears to be more supportive and appreciative of further language learning, highlighting a more positive shift in attitudes towards multilingualism.

Linguistic self-confidence is another dimension that remains the same across the original and current study's model structure. This construct covers learners' beliefs in their own language learning abilities, including self-perceptions of linguistic competence and low level of anxiety in using the L2 and L3. The persistence of this dimension across both studies underlines its influential role in establishing and maintaining motivational behavior and intended effort in language learning. Research on linguistic self-confidence has positioned it as a cardinal variable shaping the language learning experience. Jee (2017) shows that learners of Korean as a foreign language in Australia with high levels of linguistic self-confidence exhibit positive attitudes and beliefs about language learning. Her study evidences that the levels of self-confidence positively affect motivation and expectation. In a similar vein, Choi et al. (2020) demonstrate that linguistic self-confidence in bilingual adults learning Korean as a second language is a strong predictor of language-based problem-solving skills. The authors conclude that linguistic confidence is one of the most important in establishing the motivation to learn and use a second language. Likewise, Pyun et al. (2014) examined the relationship between affective variables, including linguistic self-confidence, and oral achievement in English learners of Korean as a foreign language in North American college context. The results show that learners' achievement is positively correlated with linguistic self-confidence which in turn correlates with overall language learning motivation. In a more recent study, Wu et al. (2024) posit that linguistic self-confidence is a significant predictor of EMI motivation, highlighting the fact that boosting learners' linguistic self-confidence increases motivation. All these findings, together with the current study's results, underscore the centrality of this construct in influencing the affective and cognitive dimensions of second/foreign language learning.

#### **5.4.2. The relationship between the criterion measure (intended effort) and the motivational dimensions: comparing path models**

Based on statistical analyses, participants appear to invest more effort in learning French than English. The scores for effort expended in learning French suggest greater consistency in students' dedication to learning the language, whereas the wider range for English indicate greater variability in learners' commitment to learning English. This difference in the amount of effort exerted in learning both L2 and L3 may be attributed to the academic and institutional requirements for French, given its role as the language of instruction within the bilingual program. Consequently, students would be required to invest greater effort in learning the language. Conversely, English learning appears to be less demanding as students are already receiving extensive input in English through various means including media platforms and informal interactions, thereby alleviating the perceived need to expend more effort in learning the language. Additionally, since students showed more proficiency in English than in French, investing more effort in learning French seems to be necessary in order to achieve higher competence. In fact, Schunk, Meece, and Pintrich (2014, p. 12) note that "the usefulness of effort as an index of motivation is limited by skill level, because as skill increases one can perform better with less effort". Hence, it is possible that the participants' higher proficiency and positive perceived L2 ability in English have affected the amount of effort they have invested in learning both languages. This is in accordance with Martinović and Burić (2021) who suggest that a positive perception of L2 ability resulting from successful past experiences in learning English might lead students to believe that future language learning would not necessitate a significant amount of effort.

Intended effort can be considered a dependent or endogenous variable since it only has incoming arrows in both L2 and L3 path motivation models. The path analysis of the French learning motivation model shows the Ideal L3 Self as a central construct that not only influences intended effort but also has apparent associations with other motivational dimensions. The ideal L3 self, instrumentality, and cultural interest appear to have a direct positive impact on intended effort. This suggests that learners who envision themselves as proficient French speakers have positive attitudes towards the language, its community, and culture, and consider the role of French especially in their bilingual program are more likely to invest effort in learning. The positive direct influence of these motivational dimensions on intended effort partially corroborates findings from Martinović and Burić (2021) and Taguchi et al. (2009) who highlight the cardinal role of the ideal self in exerting effort in language learning. In both studies, instrumentality has an indirect effect on intended effort via ideal and

ought-to L2 selves, while L2 cultural interest influences intended effect via the ideal self (Taguchi et al., 2009). Similarly, Rocher Hahlin (2014) report a strong correlation between the ideal L3 self and intended effort in a semi-longitudinal study investigating the influence of three classroom activities on the latter variables in Swedish learners of L3 French. She concludes that teachers ought to include ideal self-stimulating activities in their foreign language classes. Additionally, based on the path model, ideal L3 self, instrumentality, and cultural interest appear to have a bidirectional connection, underlining the interconnected nature of these dimensions. This reciprocal connection indicates that the participants' aspirational self-concept as proficient French speakers affects their engagement with culturally pertinent content and instrumental objectives, while simultaneously, exposure to cultural products and perceived pragmatic value of the language tend to promote their idealized L3 self-image. The relationship between cultural interest and instrumentality might be explained by French being presented as an invaluable tool for accessing cultural products. Additionally, based on the path model, instrumentality appears to exert an influence on the participants' perceptions of their future selves as proficient language users while at the same time being reinforced by their need to use the language for practical purposes. Linguistic self-confidence is another construct that maintains a bidirectional connection with the ideal L3 self. While linguistic self-confidence is not linked to any other motivational dimension, it is evident that learners' confidence in their linguistic knowledge only contributes to their aspirational self-image as competent French speakers. Concurrently, learners' ideal L3 self-image reinforces their linguistic self-confidence, which is in line with Magid and Chan (2011) who report on a reciprocal relationship between these constructs in a study that investigates the effect of two intervention programs on motivating Chinese learners of English as a foreign language by enhancing their vision of their ideal L2 self. However, milieu and parental influence are somewhat detached from the motivational pathways, although the PLS-SEM analysis demonstrates the interrelation of these variables with the rest of the constructs. This suggests that while milieu and parental influence may have a weaker influence on learning French, the participants' main motivational drive is internal, shaped by cultural engagement, personal aspirations, and instrumental, academic goals. Furthermore, due to their weak proficiency in French, parents are not perceived as strong role models in terms of language use which explains their weak influence on learners' motivation. In this regard, Bartram (2006) asserts that parents' language knowledge affects learner attitudes which implies that a lack of parental familiarity might lead to a more negative outlook towards language learning. Similarly, the participants' immediate environment does not seem to exert a significant impact on the rest of the motivational dimensions, perhaps indicating a lack of encouragement or

emphasis on the importance of the language which has been clearly eclipsed by the globalization of English.

The English path model, on the other hand, shows a more interconnected relationship between all motivational dimensions. Like in the French learning motivation model, the ideal L2 self appears to be a cardinal dimension exerting influence on multiple constructs. Both the ideal L2 self and cultural interest have a direct positive impact on intended effort, suggesting that the students' motivation to expend effort in learning the language is primarily internal: their envisioned selves as competent English speakers and cultural engagement are salient drivers of intended effort. These results emphasize the importance of internal motivational factors in English language learning, which is analogous to other studies including Yang and Chanyoo (2022) who report on a positive relationship between intended effort, ideal L2 self, and culture/community interest. Additionally, instrumentality seems to exert an indirect influence via the Ideal L2 Self on the amount of effort participants tend to invest in learning English, which is in line with Martinović and Burić (2021). Similar to the French motivation model, ideal L2 self shows a bidirectional connection with instrumentality and cultural interest, underscoring that participants' aspirations to become proficient English speakers are not only driven by practical, instrumental goals but also by their interest in English-speaking media and cultural products. Instrumentality receives incoming influences from parental influence and milieu, indicating that learners' perceptions of their parents' English proficiency and their social environment impact their perceived utilitarian benefits of the language. This motivates them to learn English which might be considered and reinforced as a pathway to future career and academic opportunities. According to Csizér and Dörnyei (2005, p. 27), this connection makes sense as “[p]ragmatic, utilitarian expectations concerning a L2 are socially constructed and reinforced in a community through social influences”. Moreover, the relationship between Parental Influence and Milieu might indicate that parents' language competence and attitudes affect the overall environment in which language learning is perceived as valuable and beneficial. This connection might suggest that parents' use of English and apparent positive attitude towards learning it create a supportive environment that instills a sense of linguistic validity. This can cultivate a milieu that views English as an important communicative tool with broader cultural and social relevance. Milieu, in turn, exerts an influence on linguistic self-confidence which implies that a supportive learning environment might shape learners' perceptions and foster their confidence in using the language (Csizér & Dörnyei, 2005). A social milieu that is encouraging and nurturing alleviates language anxiety and promotes self-efficacy, resulting in higher levels of

confidence in one's language abilities. Milieu is also linked to ideal L2 self; however, the connection between the two dimensions is unconventional. Kormos and Csizér (2008) assert that learners' social environment plays a crucial role in shaping their views of themselves, whereas in the current study, ideal L2 self seems to affect learners' milieu. This unique directional relationship might be explained by the assumption that learners who envision themselves as competent English speakers and who exhibit positive attitudes towards the L2 culture and community might actively seek out or create supportive social milieux that align with their aspirations. Engaging with friends in English, consuming English-speaking media, and being part of English-speaking online communities through, for example, digital gaming, can all create a supportive conducive environment (Henry, 2015) that is a result of learners' envisioned L2 self.

#### **5.4.3. The connection between the different motivational, attitudinal dimensions and L2 proficiency**

The present study's findings indicate that only the ideal L2 self and linguistic self-confidence are connected to French and English proficiency. Participants who envision themselves as competent users of the target language, hold positive attitudes towards the target community and language, and show self-belief in their language abilities are more likely to have higher proficiency. Their future self-image as proficient speakers of the target language encourages them to engage in language activities that enhance their skills, thereby reaching higher proficiency levels. The desire to achieve a native-like level can result in a heightened sense of purpose and perseverance in language learning. Being aware of the distance between their actual and ideal L2 selves, learners would "make learning a goal-oriented and purposeful activity, as [they] become cognizant of their ideals by their imagination, which motivate them to enhance their L2 performance and fill the gap between the two selves" (Ghasemi, 2018, p. 199). Investigating the role of ideal L2 self, visual learning styles, and linguistic self-confidence in predicting L2 proficiency and willingness to communicate in real life, Ghasemi (2018) demonstrates that learners' visualization of their future selves as competent English speakers motivates them to put in more effort in learning the language through various activities in order to approximate their envisioned proficiency level. These results further support Dörnyei's (2009) assertion that the ideal possible L2 self, which might lead to a visionary image that learners would aspire to make real, results in sustained learning behavior and commitment to learning. Conversely, Wong (2020) explores the influence of language proficiency on L2 motivational selves in ethnic minority young learners of Chinese and reports that learners' self-perceived proficiency mediates the effect of performed proficiency

on the Ideal L2 self, highlighting the potential bidirectional connection between both constructs. Indeed, higher proficiency can enhance learners' ideal L2 selves as observable, tangible L2 development offers concrete evidence of the progress made to reach the desired competency level. This reciprocal, mutually reinforcing relationship might be crucial in sustaining language motivation and learning behavior.

The positive correlation between linguistic self-confidence and L<sub>n</sub> proficiency highlights the importance of participants' belief in their language abilities in successful language learning. In this regard, a systematic review by Ghafar (2023) of the influence of self-confidence on English language learning highlights that a lack of self-confidence and self-assurance might impede the process of acquiring proficiency in a foreign language. Increased levels of self-confidence are shown to be correlated with enhanced English language achievement. Self-confident learners, according to Ghafar (2023), exhibit greater command of various language skills including grammar, vocabulary, and pronunciation. Similarly, Narzillayevna's (2024) systematic review of the literature on the relationship between self-confidence and English language skills also demonstrate that learners with elevated levels of self-confidence tend to successfully navigate and overcome learning challenges with minimal worry or anxiety. Besides, witnessing their gradual improvement in the target language, learners might experience a sense of accomplishment which further boosts their confidence in their language abilities (Ghasemi, 2018). Reporting on the connection between language proficiency and L2 self-confidence, Ghasemi (2018) asserts that learners' beliefs in their linguistic abilities motivates them to communicate using the language, thereby contributing to optimal language outcomes. Hence, the connection between both constructs appears to be reciprocal as linguistic self-confidence encourages learners to engage in communicative activities, thus improving language proficiency, while in turn gains reinforcement through successful language practice.

#### **5.4.4. The connection between multilingual awareness and linguistic self-confidence**

The relationship between linguistic self-confidence and meta- and crosslinguistic awareness appears to be symbiotic, although the influence of self-confidence on awareness is more pronounced (Appendix 8). Participants with higher levels of self-confidence in their language abilities tend to actively engage in crosslinguistic processing and reflect on and manipulate their languages in the face of a challenging language task, i.e., decoding an unfamiliar language. As their confidence alleviates the affective and cognitive bottlenecks associated with crosslinguistic transfer and deciphering unfamiliar language structures, participants could use their metalinguistic resources effectively, draw upon crosslinguistic connections,

and apply strategic decoding techniques to understand the Italian texts. Some comments on the role that linguistic self-confidence played in their reliance on English as the primary source of transfer during the decoding process shows that participants with higher self-confidence levels in their language abilities are more likely to access and leverage that language in challenging or unfamiliar language contexts (Section 5.4.2). This is in line with Choi et al. (2020) who investigated how linguistic confidence predicts language-based problem-solving skills in adult learners of Korean as a second language. Three domains of language-based problem solving, which require metalinguistic skills, were tested in their study: idiom comprehension, sentence comprehension, and reading comprehension. The results show that linguistic self-confidence significantly predicts the performance on all three problem-solving skills. Conversely, linguistic self-confidence can be reinforced by multilingual awareness; being cognizant of the structural, lexical, and phonological similarities and differences between languages might provide learners with a sense of mastery, substantiating their existing linguistic knowledge and boosting their confidence in navigating unfamiliar language structures. These findings are in line with Horváth (2025) who studied multilingual-raising training in a Hungarian trilingual context and reached the conclusion that a DMM-based teaching approach where multilingual awareness is stressed and fostered positively affects language motivation. Through building on the participants' L2 English and encouraging them to reflect on and draw crosslinguistic parallels between L2 English and L3 German, students' self-efficacy beliefs and confidence in learning and using German were strengthened which ultimately impacted their goal- and vision-orientedness. In this study's context, successfully applying decoding strategies to understand the unfamiliar language and recognizing crosslinguistic similarities between the languages involved reinforced the participants' perception of themselves as competent users of the learnt languages, thereby bolstering their linguistic self-confidence. Since multilingual awareness is a key component of multiple language learning and use and linguistic self-confidence is an important, affective factor in multilingual learning, evidencing and understanding the interplay between them both is imperative for creating a successful language learning experience. As Horvath (2025) noted, a multilingual teaching approach that promotes multilingual awareness helps develop more confident learners who exhibit positive attitudes towards learning additional languages, as evidenced through her multilingual awareness-raising project.

## Chapter 6. Conclusion

### 6.1. The role of metalinguistic and crosslinguistic awareness in the decoding process

From a DMM perspective, MLA and XLA make the core component of the M-factor which has a catalytic effect in multilingual learning and use. As it would be intriguing to observe meta- and crosslinguistic reasoning in action, this study adopts an alternative methodological approach different from test procedures that measure the ability to use knowledge about language(s), like grammaticality judgment tests, which follows Bialystok's conceptualization of MLA as explicit language knowledge. These test formats are usually designed to test one language, most frequently either learners' L1 or L2, seemingly without considering crosslinguistic thinking and reasoning in the operationalization of multilingual awareness. To this end, and as Spechtenhauser, Hofer, and Allgäuer-Hackl (2025) propose, an approach that includes both meta- and crosslinguistic aspects should be implemented, incorporating for example constructed artificial language or an unfamiliar language learners have to decode. Hence, this study employed a decoding task involving Italian, a language that participants are not familiar with, and a retrospective questionnaire aimed at capturing the respondents' reasoning in the process. Applying this methodology within the underexplored Hungarian context, involving Hungarian-French bilinguals learning English as a foreign language, provides a unique perspective as to how learners rely on background languages to strategically decipher a new language system.

The findings emphasize the pivotal role of metalinguistic abilities and crosslinguistic reasoning in deciphering the unfamiliar language system. Participants drew upon lexical, structural, and phonological similarities between the languages involved alongside contextual cues to comprehend Italian. French emerged as the most helpful language due to its (psycho)typological proximity to Italian; however, some students relied more heavily on English due to its dominant presence in their daily lives and self-confidence in their English language abilities. This showcases the role of linguistic self-confidence and language dominance in facilitating crosslinguistic processing, positioning English as a stronger source of transfer in some cases. Identifying cognates, structural patterns, verb conjugations, gender of nouns, and phonological similarities showed participants' strategic processing of the novel language. The accurate translation of plural nouns and verbs while recognizing cognates aligns with the Lexical Bottleneck Hypothesis as cognates alleviated lexical processing demands so more resources would be allocated for structural analysis. Additionally, participants' ability to make crosslinguistic connections at the phonological level to decode

Italian pronunciation patterns aligns with the Typological Primacy Model since phonological transfer is determined by global structural similarity between languages, in this case mostly French. Furthermore, higher L2/L3 proficiency facilitated the comprehension of Italian through the use of a variety of decoding strategies. Hence, proficiency served as a catalyst in multilingual processing, enabling participants to draw upon established linguistic knowledge more strategically and use metalinguistic abilities more effectively. It can be thus concluded that learners' experience in a bilingual program fostered a greater awareness of phonological, lexical, and structural connections between languages.

With relation to motivation, the results showed that only linguistic self-confidence correlated with the Italian test scores, indicating that the higher self-confidence, the more learners engage in crosslinguistic and metalinguistic reasoning and vice versa. Evidence from participants' comments confirms that linguistic self-confidence can facilitate crosslinguistic transfer since the possible affective and cognitive barriers would be overcome. Beliefs in one's own language abilities can reduce anxiety and enable cognizant reliance on and use of one's prior linguistic knowledge. Conversely, being aware of the structural, lexical, and phonological similarities and differences between learners' languages might offer a sense of competence, which can boost their confidence in navigating unfamiliar language systems.

## **6.2. Language motivation and attitudes: revisiting the Dörnyeiian motivational framework**

The present study's exploration of language learning motivation within the framework of Dörnyei's L2 Motivational Self System yields remarkable differences and consistencies with the original model. Notable structural changes appeared, with Parental Influence emerging as a distinct factor and what used to constitute Integrativeness and Attitudes towards L2 speakers merging to form the Ideal L<sub>n</sub> self. These divergences from the original model reflect generational linguistic shifts especially with the mounting dominance of English as a foreign language in Hungary, which is predominantly monolingual. Considering the path models for both French and English, the Ideal L2/L3 Selves, Instrumentality, Cultural Interest, and Linguistic Self-Confidence remain strong motivational constructs.

The Ideal L<sub>n</sub> Self remains a strong predictor of intended effort in both languages. The construct appears to be equally influential for both French and English; however, while the Idealized L3 self-image may be more academically driven, the Ideal L2 Self is seemingly driven by aspirations for global connectivity, cultural identification, and perceived pragmatic value. Instrumentality is another strong motivational factor, remaining stable across both the

original and current models, but with few item-related structural differences. Additionally, cultural interest, standing as a powerful predictor of intended effort and having a bidirectional connection with the ideal L2 self in the English model and ideal L3 self and instrumentality in the case of French, continues to play a cardinal role in L<sub>n</sub> motivation. Participants' perceived L2/L3 proficiency of their parents might have also influenced the way they view and interact with both of their languages. Parents' higher proficiency in English over French has contributed to their instrumental motivation; however, the construct does not seem to be as influential in the case of French. Likewise, the participants' milieu appears to exert an impact on their motivation in learning English in contrast to French where the immediate environment has a significantly weaker influence on learning the language. Comparing the original and current models, the absence of one item related to whether learning foreign languages threatens learners' Hungarian identity indicates an attitudinal shift in the way foreign languages are perceived. Additionally, the consistent presence and influence of linguistic self-confidence across both the original and present models underlines its centrality in alleviating language anxiety and fostering self-efficacy. Overall, language motivation appears to be context-related shaped by different factors including global linguistic trends and generational language preferences. The results also highlight the gradual shift in Hungarians' attitudes and mindset regarding learning foreign languages, suggesting an openness towards bi- and multilingual education considering its pragmatic and cultural value.

Exploring the relationship between language learning motivation and proficiency, the study demonstrated the connection of French and English proficiency with the ideal self and linguistic self-confidence. Although the relationships between all constructs are not robust, learners' envisioned self-image and belief in their language abilities tend to be connected to language proficiency, since this ideal self motivates sustained effort and goal-oriented learning while self-confidence reduces anxiety and promotes self-efficacy. Higher proficiency can also reinforce learners' ideal L<sub>n</sub> self, as noticeable proficiency gains offer tangible evidence of the progress made to approximate one's desired competence level. Intended effort, on the other hand, correlated mainly with French proficiency which can be attributed to the academic demands of the bilingual program. Students needed to exert more consistent effort in learning French to achieve higher competence and meet the institutional requirements for the language. In contrast, English required less effort as students have already been receiving extensive input in the language through various means, which reduced the perceived need to dedicate more effort in learning the language.

### **6.3. The role of English in additional language learning in the age of globalization**

Several participants reported relying predominantly on English to decode the Italian texts, although French is typologically closer to Italian. They explained this preference by their heightened self-confidence in their English language abilities, developed through extensive exposure to English-language media, communication with friends, reading, and instructional materials. As the de facto global language, English plays a significant role in the participants' daily lives allowing it to be used as a scaffold in decoding and learning novel languages. This finding lends a novel viewpoint to the literature on multilingual education by suggesting that in today's globalized world, English may function as a dominant transfer language. Rather than regarding its omnipresence as a barrier to learning other languages, it can be suggested that English might be an invaluable resource and a facilitating agent in further language learning. The study findings also point to the importance of affective factors such as linguistic self-confidence, resulting from daily exposure and use, in decoding unfamiliar language structures.

### **6.4. Theoretical and pedagogical implications**

This study contributes to the evolving nature of multilingualism research and L<sub>n</sub> motivation theory, especially within the Hungarian educational context which remains underrepresented particularly in MLA literature. The study lends meaningful insights into the ways learners draw on their background languages to strategically process and decode an unfamiliar language, highlighting the need for teachers to raise students' metalinguistic and crosslinguistic awareness in the classroom through integrating such tasks as decoding unfamiliar languages into language instruction. Such activities would promote strategic thinking, foster meta- and crosslinguistic reasoning, and build learners' linguistic self-confidence which supports multilingual awareness and language proficiency. Since awareness at a meta- and crosslinguistic level of the connections and overlaps between languages proved to be fundamental to decoding and understanding a new and unfamiliar language system, teaching should take this aspect into account. Promoting these two cardinal properties through multilingual teaching strategies and approaches would in fact lead to further language development. Jessner advocates for cross-language approaches that include the activation of any prior language in the multilingual system, content-based approaches that use the L<sub>2</sub> or L<sub>3</sub> as a medium of instruction, and an overall dynamic multilingual pedagogy that transcends monolingual norms to bridge all languages and create synergies. As the current study shows, in Hungarian educational contexts where a monolingual mindset prevails, students would

benefit from cross-curricular multilingual teaching methods. Since language systems within the multilingual system are perceived as dynamic and interdependent, a multicompetence approach to language teaching would lead to learners' multilingual development. Going beyond traditional monolingual instructional assumptions, which require the separation of the learner's different language, multicompetence draws on the concept of interlanguage, involving the whole mind of the language user i.e., all language systems in a multilingual mind. Trilingual instruction where the focus is on three languages, like in the case of the present study, should become the norm in Hungary due to its cognitive and multilingual advantages. Embracing learners' linguistic repertoire in its entirety and stressing strategic transfer, crosslinguistic comparison, and metacognitive engagement across languages is imperative for developing multilingual proficiency. Furthermore, planning multilingualism in the curriculum, developing multilingual materials, and adopting an integrated multilingual approach as in the Innsbruck model that enables codeswitching in joint courses that are delivered bilingually can foster multilingualism in the Hungarian education. In fact, incorporating multilingual pedagogy (e.g., language awareness/ consciousness-raising) into teacher training and curriculum design would develop teachers' linguistic awareness, which can subsequently be effective in their classrooms when engaging learners in the language learning process. Additionally, policymakers and educationalists in Hungary should re-evaluate the current structure of language instruction. Introducing second and foreign languages earlier than grades 3-4 and grade 9 would allow learners to establish a stronger linguistic foundation from a younger age. Early exposure provides students with cognitive resources necessary for multilingual learning and promotes multilingual awareness, resulting in a better and more successful language learning experience. Such reforms would position language policy in line with contemporary research-based understanding of multilingual competence and showcase the significant impact of early language learning.

This study revisits Dörnyei et al.'s (2006) language learning motivation questionnaire within the framework of the L2MSS, despite the instrument facing some criticism at some point for its factor structure and adaptability in different socio-cultural contexts. Nonetheless, this study re-examined the questionnaire in a Hungarian-French bilingual context where English is taught as a foreign language, yielding a new model that both supports and expands existing motivational theory. The presence of the Ideal L2 and L3 Self as a key motivational construct, the disappearance of Vitality of Ln Community, and the emergence of Parental Influence as a new factor emphasize the model's relevance in investigating learners' affective and identity-related orientations regarding various languages. These results highlight a need

for a revamped pedagogical approach to optimize learners' motivational trajectories, particularly in the context of less frequently taught languages and bilingual programs using languages other than English (LOTEs). Given that students showed stronger motivation towards learning English, teachers and curriculum designers, in the Hungarian context, need to re-consider their pedagogical approaches in teaching LOTEs. Instruction that mainly relies on traditional classroom methods will not generate the same level of engagement and interest learners show towards English. Besides, promoting learners' ideal aspirational visions of themselves as competent speakers of their languages through vision-building tasks, communicative activities, and project-based learning rooted in real-world language may promote their engagement with the language, increase their motivation towards learning it, and build their linguistic self-confidence. This is also possible if teachers prioritize creating more engaging, low-anxiety environments that center on a communicative rather than a grammar-based approach. Providing students with manifold opportunities for risk-free communication coupled with positive feedback can significantly boost their belief in their language abilities resulting in a sustained, positive language learning behavior. From a theoretical standpoint, linguistic self-confidence should be acknowledged as a robust construct in L<sub>n</sub> motivational models that is closely connected to and promoted by multilingual, DMM-based teaching approaches. Supported by a heightened level of meta- and crosslinguistic awareness, linguistic self-confidence appears to be not only language-specific but also transferable across languages, reducing anxiety when approaching novel languages like Italian. This dynamic interplay between cognitive and affective factors emerges as an important theoretical contribution of this research. Additionally, considering Hungary's geographic and economic position within Europe, it seems advantageous to promote LOTEs in its national educational system while emphasizing English due to its global status. English on the other hand can act as a scaffold or reference system when learning additional languages, especially when students are highly exposed to English-language input and show higher confidence in their English skills. Instead of viewing English dominance as an obstacle or threat to multilingual education, teachers can purposefully use English to draw crosslinguistic connections, thereby facilitating the comprehension of LOTE input. This would ultimately lead to the development of higher self-confidence and positive emotional orientations towards learners' languages and the multilingual approach and experience in general. This implies that learners' background languages, including English, should be leveraged to support further language learning, instead of following traditional teaching approaches that separate languages.

## **6.5. Limitations and suggestions for future research**

Notwithstanding the contributions of this study, a number of limitations need to be acknowledged and from which recommendations for future research are outlined for a better and more thorough understanding of the concepts involved in this context. First, future research might benefit from investigating the comprehension of another language that is typologically more distant from the previously learned languages. Since awareness of the linguistic distance between the languages involved has, to a great extent, influenced participants' choice of the source language for crosslinguistic consultation, it would be intriguing to investigate the decoding strategies used in the understanding of an unfamiliar language more distantly related to French and English. Furthermore, while the retrospective questionnaire offered insightful reflections on learners' decoding strategies, employing think-aloud protocols in an interview format during the decoding process could provide richer, more thorough data on learners' metalinguistic abilities and crosslinguistic transfer strategies. Considering language motivation, although PLS-SEM was used, the factor structure of the present study's motivation model should be interpreted and generalized with caution given the relatively limited number of participants. Additionally, while the research re-examined Dörnyei et al.'s (2006) motivation questionnaire within the L2MSS, yielding intriguing results, future studies could make use of more exhaustive instruments such as Taguchi et al.'s (2009) motivation questionnaire, which includes a larger number of components that are based on established questionnaires. Such elaborate questionnaires might allow for a more overarching view of learners' motivational dispositions. Interviews with teachers regarding their teaching methodologies and strategies can also add to the bigger picture of how certain approaches influence students' motivation towards learning different languages.

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## Appendices

### Appendix 1. LEAP-Q

#### Northwestern Bilingualism & Psycholinguistics Research Laboratory

Marian, Blumenfeld, es Kaushanskaya (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech Language and Hearing Research*, 50 (4), 940-967.

Translated into Hungarian by Timea Kutasi (University of Edinburgh, UK) and Zsuzsanna Maté

#### A nyelvismereti és nyelvjártassági kérdőív (LEAP-Q)

Név		Kor		Férfi <input type="checkbox"/>	Nő <input type="checkbox"/>
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(1) Írja le az összes nyelvet amit tud kezdve a legdominánsabbal:

1	2	3	4	5
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(2) Sorolja fel az összes nyelvet amit tanult (anyanyelvvvel kezdve):

1	2	3	4	5
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(3) Írja le, hogy milyen gyakran és milyen arányban van kitéve a hétköznapokban ezeknek a nyelveknek. (százalékban adja meg)

*(A százalékok összegének pontosan 100%-nak kell lennie)*

Nyelv:					
Százalék:					

(4) Ha egy adott szöveg elérhető minden ön által ismert nyelven, melyik nyelvet választaná, hogy elolvassa? Feltéve, hogy a szöveg eredetije egy ön által ismertlen nyelven íródott.

*(A százalékok összegének pontosan 100%-nak kell lennie)*

Nyelv:					
Százalék:					

(5) Ha beszélpartnere ugyanolyan jól beszél az ön által ismert összes nyelven mint ön, melyik nyelvet részesítené előnyben, hogy beszélgessenek? Kérem sorolja fel százalékos arányban.

*(A százalékok összegének pontosan 100%-nak kell lennie)*

Nyelv:					
Százalék:					

(6) Mondja meg, hogy melyik kultúra(k)hoz tartozik. Egy 0-10-es skálán pontozza melyikhez áll a legközelebb (magyar, török, erdélyi, angol...):

Írja le a kulturákat:					

(7) Van-e látási problémája , hallási problémája , beszédi problémája , vagy tanulási nehézsége ? (Ha igen, kérem fejtsse ki bővebben): \_\_\_\_\_

Nyelv: .....

Ez a **első** nyelvem.

Az alább felsorolt kérdések mind erre a nyelvre vonatkoznak.

(1) Kor amikor...:

Elkezdte tanulni ezt a nyelvet:	Folyékonyan beszélt:	Elkezdett olvasni az adott nyelven:	Folyékonyan olvasott rajta:

(2) Írja le, hogy hány évet és hónapot töltött el a különböző nyelvi környezetekben:

	Év	Hónap
Ország ahol ezt a nyelvet használja		
Család ahol használja		
Iskola/munkahely ahol használja		

(3) Egy 0-10-es skálán válassza ki, hogy **mennyire tud** ezen a nyelven beszélni, mennyire érti, és mennyire tud olvasni (válasszon a menü-ből):

Beszélni		Érteni		Olvasni	
----------	--	--------	--	---------	--

(4) Egy 0-10-es skálán, mondja meg, hogy mennyire segítettek a következő tényezők a nyelv tanulásában:

Barátokkal kommunikálni		Nyelvtan kazetták/magán tanulás	
Családdal kommunikálni		TV nézés	
Olvasás		Rádióhallgatás	

(5) Egy 0-10-es skálán, mondja meg, hogy mennyire van az adott nyelvnek kitéve amikor:

Barátokkal kommunikál		Rádiót hallgat	
Családdal kommunikál		Olvas	
TV-t néz:		Tanul	

Nyelv: .....

Ez a **második** nyelvem.

Az alább felsorolt kérdések mind erre a nyelvre vonatkoznak.

(1) Kor amikor...:

Elkezdte tanulni ezt a nyelvet:	Folyékonyan beszélte:	Elkezdett olvasni az adott nyelven:	Folyékonyan olvasott rajta:

(2) Irja le, hogy hány évet és hónapot töltött el a különböző nyelvi környezetekben:

	Év	Hónap
Ország ahol ezt a nyelvet használja		
Család ahol használja		
Iskola/munkahely ahol használja		

(3) Egy 0-10-es skálán válassza ki, hogy **mennyire tud** ezen a nyelven beszélni, mennyire érti, és mennyire tud olvasni (válasszon a menü-ből):

Beszélni		Érteni		Olvasni	
----------	--	--------	--	---------	--

(4) Egy 0-10-es skálán, mondja meg, hogy mennyire segítettek a következő tényezők a nyelv tanulásában:

Barátokkal kommunikálni		Nyelvtan kazetták/magán tanulás	
Családdal kommunikálni		TV nézés	
Olvasás		Rádióhallgatás	

(5) Egy 0-10-es skálán, mondja meg, hogy mennyire van az adott nyelvnek kitéve amikor:

Barátokkal kommunikál		Rádiót hallgat	
Családdal kommunikál		Olvas	
TV-t néz:		Tanul	

Nyelv: .....

**Ez a harmadik nyelvem.**

**Az alább felsorolt kérdések mind erre a nyelvre vonatkoznak.**

**(1) Kor amikor...:**

Elkezdte tanulni ezt a nyelvet:	Folyékonyan beszélt:	Elkezdett olvasni az adott nyelven:	Folyékonyan olvasott rajta:

**(2) Irja le, hogy hány évet és hónapot töltött el a különböző nyelvi környezetekben:**

	Év	Hónap
Ország ahol ezt a nyelvet használja		
Család ahol használja		
Iskola/munkahely ahol használja		

**(3) Egy 0-10-es skálán válassza ki, hogy  **mennyire tud**  ezen a nyelven beszélni, mennyire érti, és mennyire tud olvasni (válasszon a menü-ből):**

Beszélni		Érteni		Olvasni	
----------	--	--------	--	---------	--

**(4) Egy 0-10-es skálán, mondja meg, hogy mennyire segítettek a következő tényezők a nyelv tanulásában:**

Barátokkal kommunikálni		Nyelvtan kazetták/magán tanulás	
Családdal kommunikálni		TV nézés	
Olvasás		Rádióhallgatás	

**(5) Egy 0-10-es skálán, mondja meg, hogy mennyire van az adott nyelvnek kitéve amikor:**

Barátokkal kommunikál		Rádiót hallgat	
Családdal kommunikál		Olvas	
TV-t néz:		Tanul	

## Appendix 2. French Proficiency Test

Nom et prénom :.....

**Dans un magazine d'actualité francophone, vous lisez un article sur le téléphone portable à l'école.**

### **L'interdiction du téléphone portable au collège**

Selon une étude, les élèves qui fréquentent des écoles où le téléphone est interdit ont de meilleurs résultats que les autres. Dernièrement, le ministre de l'éducation nationale a souhaité durcir l'interdiction des téléphones portables au collège qui existe déjà, mais qui, en pratique, n'est pas suffisamment appliquée parce qu'aucune sanction n'est prévue.

On semble oublier que le personnel en milieu scolaire applique déjà cette mesure, comme le rappelle Lysiane Gervais, secrétaire nationale du SNPDEN-Unsa\* : « Dans 97 % des collèges, l'utilisation du portable est interdite. Cela fonctionne plus ou moins bien. Si un élève utilise son téléphone ou s'il sonne en cours, l'appareil est confisqué et remis aux parents ». Elle ajoute qu'une interdiction totale est « impossible à gérer. Quand on est sur le terrain, on s'en rend bien compte. »

De plus, les élèves ont des téléphones portables au collège car ils sont équipés par leurs parents qui veulent pouvoir joindre leur enfant après la classe, parce que ça les rassure. Selon le responsable d'une fédération de parents d'élèves, il y aurait autant de parents favorables à l'interdiction des téléphones portables qu'à leur autorisation. C'est pourquoi les modalités de cette interdiction doivent être discutées avec les familles.

Catherine Nave-Bekhti, secrétaire générale du Sgen-CFDT\*, juge cette nouvelle interdiction inutile. « Ajouter de l'interdiction à l'interdiction ne dit pas comment on règle le problème. Tous les collèges ne sont pas équipés de casiers ». Cela nécessite des équipements et suffisamment de place. « L'autre élément est que certains enseignants développent un usage pédagogique des outils numériques. Un autre inconvénient à cette interdiction est le risque de priver les adolescents d'un apprentissage sur l'utilisation raisonnée d'Internet et des réseaux sociaux. Les enseignants font réfléchir leurs élèves quant à leur utilisation du numérique, aux conséquences de ce qu'ils y écrivent, au droit à l'image et au respect de l'autre. Les outils numériques contribuent à la formation des élèves. On aurait préféré une réflexion collective sur la place du numérique à l'école plutôt que de découvrir que le sujet serait à nouveau relancé, sans dialogue. Le ministère devrait ouvrir le débat à tous les acteurs de l'école. »

Pour certains enseignants, le débat dépasse celui de l'école : « Je parle des écrans avec les ados, je valorise la lecture de livres, mais le véritable problème c'est ce qui se passe à la maison » s'inquiète Jean-Thomas Giovannoni, professeur d'anglais, qui a lui-même grandi sans télévision. « Il faut que les parents apprennent à leurs enfants à garder une distance avec les écrans. »

D'après Céline HUSSONNOIS-ALAYA, [www.bmftv.com](http://www.bmftv.com)

\* SNPDEN-Unsa : syndicat de l'éducation nationale.

\* Sgen-CFDT : syndicat de l'éducation nationale.

**Pour répondre aux questions, cochez la bonne réponse.**

1. Une enquête montre que l'usage du téléphone portable à l'école a des conséquences négatives sur ..... des jeunes.

- la concentration
- le niveau scolaire
- les relations sociales

2. Selon Lysiane Gervais, dans l'intérêt des jeunes, il faudrait ..... le téléphone à l'école.

- autoriser pleinement
- tolérer sous conditions
- interdire complètement

3. Les parents seraient ..... l'utilisation du téléphone par les élèves à l'école.

- très opposés à
- plutôt partagés sur
- globalement favorables à

4. Pour Catherine Nave-Bekhti, interdire le portable à l'école est difficile par manque.....

- de personnel.
- de volonté politique.
- de moyens matériels.

5. Selon Catherine Nave-Bekhti, interdire le portable à l'école.....

- serait un obstacle aux libertés individuelles.
- priverait les élèves d'une éducation aux usages d'Internet.
- empêcherait les élèves de développer des relations sociales.

6. Pour Catherine Nave-Bekhti, la question du numérique à l'école est.....

- peu discutée.
- déjà dépassée.
- trop médiatisée.

7. Pour Jean-Thomas Giovannoni, la question de l'usage du téléphone chez les jeunes relève principalement de la responsabilité.....

- de l'école.
- de la famille.
- des jeunes eux-mêmes.

**Pour chacune de ces phrases, on vous suggère quatre choix; il n'y a qu'une bonne réponse parmi ces quatre choix. Choisissez le mot ou le groupe de mots qui complète le mieux la phrase et cochez la case correspondante.**

1. Pour s'inscrire à la bibliothèque, il faut ..... une pièce d'identité.

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| <input type="checkbox"/> apporter | <input type="checkbox"/> emmener |
| <input type="checkbox"/> emporter | <input type="checkbox"/> ramener |

2. L'avocat..... nous nous sommes adressés est un des meilleurs de Paris.

que  
lequel

auquel  
duquel

3. Four très chaud! ..... attention à ne pas vous brûler!

Faites  
Ferez

Ferons  
Faisons

4. Si Michel avait pu prendre le train de midi, il ..... à temps pour la réunion ce soir.

serait arrivé  
aurait arrivé

arriverait  
est arrivé

5. Alain est très occupé ces jours-ci; cela m'étonnerait qu'il ..... demain.

venira  
viendra

vient  
vienne

6. Après un repas dans un restaurant, il faut payer .....

l'addition  
la note

le billet  
le prix

7. Paris est divisé en vingt ....., numérotés de I à XX.

provinces  
centres

arrondissements  
départements

8. Avant d'envoyer tout colis, vous le ferez ..... pour en savoir le poids exact.

numéroter  
compter

peser  
ficeler

9. En début de réunion, le chef de service a distribué ....., qui résumait la discussion de la réunion précédente.

les minutes  
Le compte-rendu

les poursuites  
le règlement

10. Le directeur a été très clair sur ce point : il n'..... pas question d'accepter la proposition.

est  
ait

a  
eu

### Appendix 3. English Proficiency Test

Name:.....

Read the email about a birthday party and choose the best answer for each question.

My dear friends,

Thank you so much for coming to my birthday party yesterday! I had such a good time with you all. Patrick, thanks for being the grill master, the meat was delicious. And thanks to Nikki for preparing all those salads. They were so tasty, especially the green salad with the grilled vegetables. And Tom and Claire, thanks for lending us your inflatable swimming pool. The children loved it, especially because it was such a hot day.

I also love all of my gifts. The hat is perfect; I love the color. And the earrings are gorgeous. I will wear them tonight at the restaurant. I'm sure my mum will love them, too.

And by the way, Peter, you forgot your sunglasses at my house, but don't worry, I'll bring them to the office tomorrow.

Thanks again to all of you! Enjoy the rest of your Sunday.

Lots of love,

Helen

1. Who cooked the meat?

Tom                       Nikki                       Claire                       Patrick

2. When is Helen's birthday?

spring                       summer                       autumn                       winter

3. Where is Helen going in the evening?

To a restaurant                       To Peter's house                       To a hotel                       To her mom's house

4. What will Helen's mother like?

Helen's shoes                       Helen's clothes                       Helen's bag                       Helen's jewelry

5. Which day was the party?

Friday                       Saturday                       Sunday                       Monday

6. Why did Helen mention Peter in the email?

To thank him for a pair of sunglasses                       To ask him to bring something to the office  
 To remind him to bring something to her house                       To tell him he left something at the party

7. What is Helen's email mainly about?

Thanking people for going to her party                       Thanking people for visiting her  
 Thanking people for helping her                       Thanking people for a special present

Fill in the gap with the right option.

1. I'd prefer to do the assignment by \_\_\_\_\_. I don't like group work.  
 myself       my own       me alone       my
2. That wasn't a good idea. You \_\_\_\_\_ thought about it more carefully.  
 have to       should have       must have       ought have
3. I'd love to \_\_\_\_\_ in the 19th century.  
 live       lived       have lived       have been lived
4. If I had more money, I \_\_\_\_\_ buy a new car.  
 'm going to       would       want to       will
5. Alex and Adam took off \_\_\_\_\_ to walk on the beach.  
 they shoe       their shoe       their shoes       they shoes
6. Martin \_\_\_\_\_ into the field and \_\_\_\_\_ a butterfly in his nest.  
 ran, catched       runned, catched       run, caught       ran, caught
7. The new sofa isn't \_\_\_\_\_ the old one.  
 as nice as       as nice than       as nicer than       the nicest
8. \_\_\_\_\_ spent time abroad when I was a student, I found it easier to get used to \_\_\_\_\_ in another country.  
 To have, living       Having, live       Having, living       Have, live
9. He said to the police that his car \_\_\_\_\_.  
 stole       was stole       had stolen       had been stolen
10. Tom lives in a mansion. He \_\_\_\_\_ rich.  
 must be       should be       can be       isn't

## Appendix 4. Italian Reading Comprehension Test

Name:.....

Read the texts then answer the questions by choosing the right option.

### Text 1: Parcheggio automobile e treno

La società italiana delle ferrovie Trenitalia fa un'offerta ai viaggiatori: nelle città di Torino, Milano e Padova, in alcuni parcheggi vicini alle stazioni ferroviarie, c'è uno sconto del 10% sul costo del parcheggio. L'offerta è valida dal lunedì alla domenica 24 ore su 24. Puoi lasciare la tua automobile vicino alla stazione e puoi partire con il treno. Per avere lo sconto devi mostrare il biglietto del treno alla cassa del parcheggio.

1. L'offerta di Trenitalia è valida  
 in alcune città italiane.     in tutta Italia.     in Italia e all'estero.
2. Con l'offerta di Trenitalia risparmi il 10%  
 sul parcheggio dell'auto.     sul biglietto del treno.     sul prezzo della benzina.
3. L'offerta di Trenitalia è valida  
 il sabato e la domenica.     dal lunedì al sabato.     tutti i giorni.
4. Per avere lo sconto devi  
 presentare il biglietto del treno.     riempire un modulo.     mostrare la patente di guida.

### Text 2: La giornata di Carlo

Ciao, mi chiamo Carlo e ho diciotto anni. Oggi vorrei parlarvi della mia tipica giornata. Mi alzo sempre alle 7:00 e faccio una buona colazione con tè e biscotti.

Dopo aver incontrato il mio amico Marco prendo alle 7:40 l'autobus che mi porta a scuola.

Mi piace molto la mia scuola perché ho molte materie che riguardano il mondo dell'informatica! Ogni giorno ho 6 ore di lezione, tranne il sabato in cui ne ho 5.

Quando torno a casa studio e faccio i compiti, ma mi diverto anche giocando al computer e suonando la mia chitarra. Ceno alle 19:00 con la mia famiglia, composta da mia mamma, mio papà e i miei tre fratelli. Alle 22:30 circa vado a letto a leggere alcuni libri prima di dormire.

1. How old is Carlo?  
 8 years old     13 years old     18 years old
2. What does Carlo have for breakfast?  
 Yogurt and biscuits     Tea with biscuits     Coffee
3. Carlo likes his school because it has many subjects in.....  
 information technology     electronics     linguistics
4. What does Carlo play at home in the evening?  
 his guitar     his violin     his piano
5. When does Carlo usually have dinner with his family?

7:40 22.30 19:00

6. What's the gender of the noun "famiglia"?

 feminine neutral masculine

### Text 3: Mi chiamo Sofia

Mi chiamo Sofia. Ho 35 anni. Mio marito si chiama Alessandro e ha 36 anni. La mia famiglia è composta in tutto da cinque persone. Io e mio marito abbiamo tre figli.

Viviamo in un piccolo paese di campagna. I nostri tre figli si chiamano Andrea, Martina e Giacomo. Andrea frequenta l'asilo, Martina e Giacomo frequentano le scuole elementari. I miei tre figli amano giocare a tanti giochi diversi nel cortile.

I genitori di mio marito vivono lontano da qui, in città. I miei genitori invece abitano vicino a noi, nello stesso paese.

Vicino a noi abita mia sorella Giulia con la sua famiglia. I miei figli giocano spesso con Marta, la figlia di Giulia.

1. Combien d'enfants Sofia et Alessandro ont-ils ?

 Deux Trois Cinq

2. Quelle école Martina et Giacomo fréquentent-ils ?

 Lycée Collège École primaire

3. Les enfants de Sofia et Alessandro aiment jouer.....

 aux jeux vidéos à différents jeux dans la cour de la maison dans le jardin

4. Ou vivent les parents de Sofia ?

 En ville, loin d'elle À l'étranger Près d'elle, dans la même ville

5. Qui est Marta?

 La fille de Sofia et Alessandro. La sœur de Sofia. La nièce de Sofia.

6. Quel est le sujet de la phrase « Io e mio marito abbiamo tre figli » ?

 mio marito Io e mio marito tre figli

## Appendix 5. Retrospective Questionnaire

### Kérdőív

Segített a magyar nyelv megérteni az 1., 2., 3. szöveget? Ha igen, akkor kérlek idézz példákat az egyes szövegekből!

.....  
.....  
.....  
.....

Segített a francia nyelv megérteni az 1., 2., 3. szöveget? Ha igen, akkor kérlek idézz példákat az egyes szövegekből!

.....  
.....  
.....  
.....

Segített az angol nyelv megérteni az 1., 2., 3. szöveget? Ha igen, akkor kérlek idézz példákat az egyes szövegekből!

.....  
.....  
.....  
.....

Az általad ismert nyelvek közül melyik nyelv tűnt a leghasznosabbnak megérteni az olasz szövegeket és megválaszolni a kérdéseket? Magyar, francia, angol?

.....

Milyen volt a feladat: könnyű, közepes (nem túl könnyű, nem túl nehéz) vagy nehéz?

.....

Segített valami más a szövegek megértésében, például a szövegkörnyezet? Kérlek, adj példákat!

.....  
.....  
.....  
.....

## Appendix 6. Language Disposition Questionnaire (Motivation Questionnaire)

Név :.....

### Nyelvi motivációs kérdőív

Szeretnénk megkérni téged, hogy segíts nekünk az alábbi idegennyelv-tanulással kapcsolatos kérdések megválaszolásával. Ez nem teszt, így nincsenek "helyes" vagy "helytelen" válaszok.

- I. A következő részben azt szeretnénk, ha néhány kérdésre válaszolnál 1-től 5-ig.  
5 = nagyon, 4 = eléggé, 3 = közepesen, 2 = nem igazán, 1 = egyáltalán nem

	Francia	Angol
1. Mennyire szereted ezeket a nyelveket?		
2. Szerinted ezeknek a nyelveknek az ismerete mennyire segít abban, hogy nagyobb tudású ember legyél?		
3. Szerinted mennyire fontosak ezek a nyelvek a mai világban?		
4. Szerinted mennyire fontos e nyelvek tanulása ahhoz, hogy többet megtudjunk beszélőik kultúrájáról és művészetéről?		
5. Mennyi erőfeszítést fektetsz e nyelvek megtanulására?		
6. Mit gondolsz, mennyiben segít e nyelvek ismerete külföldi utazáskor?		
7. Mit gondolsz, mennyit segít e nyelvek ismerete leendő karrieredben?		
8. Édesanyád mennyire beszéli ezeket a nyelveket?		
9. Édesapád mennyire beszéli ezeket a nyelveket?		
10. Mennyire szeretnél hasonlítani azokhoz az emberekhez, akik e nyelveket beszélik?		

5 = nagyon, 4 = eléggé 3 = közepesen, 2 = nem igazán, 1 = egyáltalán nem

	Franciaország	Anglia
11. Mennyire szeretnél ezekben az országokba utazni?		
12. Szerinted mennyire gazdagok és fejlettek ezek az országok?		
13. Szerinted mennyire fontos szerepet játszanak ezek az országok a világban?		
14. Mennyire szeretsz találkozni külföldiekkel ezekből az országokból?		
15. Mennyire szereted az ezekben az országokban készült filmeket? (Ha nem ismersz, írd 0-t.)		
16. Mennyire szereted az ezekben az országokban készült tévéműsorokat? (Ha nem ismersz, írd 0-t.)		
17. Mennyire kedveled azokat az embereket, akik ezekben az országokban élnek?		

18. Milyen gyakran látsz ezekben az országokban készült filmeket/TV-műsorokat?		
19. Mennyire szereted az ezekben az országokban készült magazinokat? (Ha nem ismersz, írd 0-t.)		
20. Milyen gyakran találkozol ezekből az országokból érkező külföldiekkel (pl. utcán, éttermekben, nyilvános helyeken)?		
21. Mennyire szereted ezeknek az országoknak a popzenéjét? (Ha nem tudsz, írd 0-t.)		

II. Minden állítás után öt doboz található. Kérjük, tegyél egy „X”-et abba a négyzetbe, amely a legjobban kifejezi, mennyire igaz a Te érzéseidre vagy helyzetedre vonatkozó állítás.

	Egyáltalán nem igaz	Nem igazán	Részen igaz	Többnyire igaz	Teljesen igaz
22. Biztos vagyok benne, hogy jól meg fogok tudni tanulni egy idegen nyelvet.					
23. Úgy gondolom, az a típus vagyok, aki nyugtalanul és rosszul érezné magát, ha valakivel idegen nyelven kellene beszélnem.					
24. A körülöttem lévők hajlamosak azt gondolni, hogy jó dolog idegen nyelveket tudni.					
25. Nem gondolom, hogy az idegen nyelvek fontos tantárgyak.					
26. Gyakran nézek műholdas műsorokat a tévében.					
27. Szüleim nem tartják fontos tantárgynak az idegen nyelvet.					
28. Az idegen nyelvek tanulása félelmet kelt bennem, hogy emiatt kevésbé fogom magam magyarnak érezni.					
29. Az idegen nyelv tanulása nehéz feladat.					

## Appendix 7. Factor pattern matrices (items 1-21)

### French factor loadings

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
F18	0.716					0.368
F15	0.662					0.584
F14	0.498					0.581
F16	0.462					0.688
F17	0.316			0.390		0.634
F3		0.733				0.403
F2		0.622				0.600
F6		0.538				0.572
F4		0.370				0.818
F7		0.360				0.705
F1			0.649			0.377
F21			0.446			0.711
F11			0.327			0.712
F10			0.325			0.665
F12				0.708		0.484
F13				0.409		0.707
F20					0.741	0.407
F9					0.364	0.880
F8					0.347	0.785
F19						0.835

*Note.* Applied rotation method is oblimin.

English factor loadings

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
E18	0.866					0.284
E15	0.685					0.464
E16	0.647					0.564
E21	0.352					0.782
E20	0.300					0.792
E19						0.822
E14		0.790				0.378
E1		0.669				0.523
E17		0.545				0.473
E11		0.439				0.639
E10		0.339				0.663
E13						0.887
E7			0.836			0.295
E2			0.470			0.709
E12						0.771
E8				0.616		0.600
E9				0.498		0.658
E3					0.542	0.702
E4					0.332	0.817
E6						0.977

*Note.* Applied rotation method is oblimin.

### Appendix 8. Path coefficients and significance levels

#### French Path Model

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Cultural interest > effort	0.171	0.176	0.096	1.783	0.038
Ideal L3 self > cultural interest	0.557	0.556	0.061	9.169	0.000
Ideal L3 self > effort	0.298	0.288	0.097	3.085	0.001
Ideal L3 self > instrumentality	0.477	0.488	0.079	6.008	0.000
Ideal L3 self > linguistic self-confidence	0.278	0.281	0.129	2.157	0.016
Cultural interest > ideal L3 self	0.444	0.437	0.066	6.770	0.000
Instrumentality > effort	0.196	0.175	0.085	2.319	0.011
Instrumentality > ideal L3 self	0.350	0.357	0.063	5.520	0.000
Linguistic self-confidence > ideal L3 self	0.135	0.140	0.078	1.718	0.043
Cultural interest > instrumentality	0.282	0.291	0.081	3.465	0.000

English Path Model

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Ideal L2 self > cultural interest	0.453	0.465	0.084	5.394	0.000
Ideal L2 self > milieu	0.276	0.286	0.120	2.301	0.011
Milieu > instrumentality	0.195	0.194	0.091	2.154	0.017
Parental influence > instrumentality	-0.179	-0.177	0.106	1.685	0.047
Cultural interest > effort	0.216	0.207	0.070	3.080	0.001
Cultural interest > ideal L2 self	0.461	0.481	0.089	5.171	0.000
Ideal L2 self > effort	0.420	0.438	0.070	5.962	0.000
Milieu > linguistic self-confidence	0.935	0.922	0.032	29.221	0.000
Ideal L2 self -> instrumentality	0.187	0.197	0.087	2.146	0.017
Parental influence > milieu	-0.193	-0.199	0.102	1.889	0.031
Instrumentality > ideal L2 self	0.209	0.212	0.090	2.315	0.010