

## Orchestrating Harmony in the Chaos of Maltese Language Learning through the Lens of Chaos/Complexity Theory

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### Abstract

*Despite considerable studies in the field of second language acquisition (SLA), the precise cognitive processes occurring in an adult's mind during second language (L2) learning remain elusive. This study investigates the intricate process of adult's SLA, specifically focusing on Maltese. Grounded in chaos/complexity theory (C/CT), the research explores the non-linear, dynamic, and unpredictable nature of language learning, likening it to the emergence of order in seemingly chaotic systems. The study employs a qualitative approach, by employing various data collection methods such as structured tests, reflective journals, and interviews to track the learning progression of 35 adults learning Maltese over 15 months. The emphasis is on the acquisition of Maltese verbs and the emergence of non-linear learning curves, akin to the butterfly effect in C/CT. The findings underscore the chaotic yet harmonious nature of Maltese language learning, providing valuable insights for educators and learners alike.*

## 1. INTRODUCTION

The Maltese language, a unique blend of Semitic, Romance and English influences, gained official status in the European Union (EU) following Malta's accession in 2004. This development has necessitated proficiency in Maltese for non-EU citizens working in Malta under Directive 2005/36/EU, Article 53 (Camilleri Grima & Żammit, 2020).

### 1.1. Statement Problem

Despite the growing importance of the Maltese language, especially after it gained official status in the EU and the necessity for non-EU citizens working in Malta to be proficient in it, research into the acquisition of Maltese as a second language is limited. This study aims to address this gap by investigating the process of Maltese acquisition, focusing on verbal tense and aspect. The study posits that this process is non-linear and dynamic, reflecting the principles of chaos/complexity theory (C/CT). However, the patterns and trajectories in the learning process of adults learning Maltese remain unexplored. This lack of understanding hinders the development of effective Maltese as a foreign language education policies and practices.

### **1.2.Aims of the Study**

This study aims to address the research gap in the field of Maltese acquisition. It seeks to investigate the process of Maltese acquisition, focusing on verbal tense and aspect. The study also aims to illuminate the intricate process of Maltese acquisition and provide valuable insights for educators and policy-makers. Ultimately, the study seeks to demonstrate the harmony in the apparent chaos of language learning, shedding light on the intricate interplay of cognition, context, and chaos in the journey of Maltese language acquisition.

### **1.3.Research Question**

In an attempt to understand the intricacies of international adults learning the Maltese language and the unpredictable nature of this language learning process, the following research questions were formulated for this study:

- (a) How does the process of second language acquisition in adults, specifically in the context of learning Maltese, reflect the principles of chaos/complexity theory?
- (b) What kind of learning curves emerge in the acquisition of Maltese verbs over time?

## **2. LITERATURE REVIEW**

The field of second language acquisition (SLA) has been a subject of extensive research, with scholars such as Ellis (1994) and Gass (1997) contributing significantly to the scholarly understanding of the cognitive processes involved in learning a second language (L2). However, the precise mechanisms underlying these processes, particularly in adults, remain elusive. More recent studies by Ortega (2014) and DeKeyser (2020) have further explored these mechanisms, providing new insights into the cognitive processes of adult L2 learning.

The application of C/CT to the field of SLA is a relatively recent development. Larsen-Freeman (1997) was among the first to propose this approach, arguing that language learning is a complex, dynamic system characterised by non-linearity, sensitive dependence on initial conditions, and emergent order. This perspective has been further developed by scholars such as de Bot, Lowie, and Verspoor (2007), who have emphasised the unpredictable and chaotic nature of language learning. Furthermore, Spoelman and Verspoor (2010) have applied C/CT to the study of L2 development, highlighting the value of this approach in capturing the dynamic, evolving nature of language proficiency.

The study of Maltese as a second language is a relatively unexplored area within the field of SLA. The Maltese language, with its unique blend of Semitic, Romance and English influences, presents a rich context for investigating the complexities of adult language learning. Borg and Azzopardi-Alexander (1997) provide a comprehensive overview of the linguistic features of Maltese, including its complex verb system, which is the focus of the current study. Camilleri Grima (2022), Vella (2013), and Żammit (2021) have also explored the challenges and opportunities of learning Maltese as a second language, shedding light on the unique aspects of this language and their implications for language learning and teaching.

The concept of non-linear learning curves, akin to the butterfly effect in C/CT, is an innovative approach to understanding the process of language acquisition. This idea, which

suggests that small changes in learning can lead to significant outcomes, has been explored in various fields but is relatively new to SLA. Larsen-Freeman (2020) has also discussed the relevance of fractal patterns in language learning, suggesting that these patterns can provide valuable insights into the non-linear, dynamic nature of language development.

The current study builds on a rich body of literature in the field of SLA and introduces new theoretical and methodological approaches to understanding the complex process of adults learning the Maltese language.

### **3. METHODOLOGY**

This study employs a qualitative research design to investigate the process of SLA in adults, specifically focusing on the learning of Maltese. The use of qualitative methods in SLA research has been advocated by several scholars (Ellis, 2008), who argue that these methods provide a more nuanced understanding of the language learning process. In particular, the use of structured tests, reflective journals, and interviews can offer valuable insights into the learner's experience and the development of their language skills over time. Mackey and Gass (2021) have further emphasised the importance of qualitative methods in SLA research, arguing that they allow for a deeper exploration of learners' subjective experiences and perceptions.

#### **3.1. Participants**

The study involved 35 adult participants who are learning Maltese as a foreign language. The participants were selected using purposive sampling to ensure a diverse range of language backgrounds and learning experiences. They were all learning Maltese in evening classes and were at the Intermediate Level (Level B2).

The participants were diverse in terms of their demographic characteristics. They came from various countries such as the United Kingdom, Nigeria, Portugal, Spain, Germany, France, Pakistan, Denmark, Estonia, Albania, Italy, India, China, Libya, Lebanon, Kenya, and Palestine. The ages of the participants ranged from 29 to 74 years.

The participants had different occupations, including nurses, teachers, iGaming company affiliate managers, consultants, accountants, clerks, builders, and translators. Some participants were single, while others were married or in a relationship.

Their native languages varied widely, including Yoruba, Portuguese, Sindhi, Urdu, Danish, Estonian, Albanian, Italian, and Levantine Arabic. They also knew other languages such as Igala, Itsekiri, English, Spanish, French, Italian, Punjabi, German, Russian, Classical Arabic, and more.

The reasons for learning Maltese among the participants were diverse, ranging from professional needs and personal interest in the language and culture, to familial relationships. They learn Maltese through various methods such as attending courses, learning at work, talking to Maltese people, reading short stories and newspapers, watching television, and chatting with Maltese friends on SKYPE and social media, especially on Facebook. They tried to use Maltese in different contexts, mostly at work and in their daily life.

This rich demographic information provided a comprehensive understanding of the participants' backgrounds, which was crucial for analysing the Maltese language acquisition process.

### **3.2.Data Collection**

Over a span of 15 months, diverse methodologies were employed to collect data in this longitudinal study, thereby encapsulating the intricate and dynamic nature of the language acquisition process. These methods included:

**Structured Tests:** The methodology employed in this study involved administering structured tests to the participants at regular intervals. The primary objective of these tests was to assess the participants' proficiency in Maltese, with a particular focus on their acquisition of Maltese verbs. The design of these tests was grounded in the principles of communicative language testing, as outlined by Bachman and Palmer (2010). The same test paper, which was used for both the Timed Grammaticality Judgment Test (TGJT) and the Verb Conjugation (VC) tests, was administered six times at three-month intervals. This structured testing process comprised two main components:

- (i) *Timed Grammaticality Judgment Tests:* In this part of the test, the learners were presented with 40 sentences (see Appendix 1). Each sentence contained a verb that needed to be judged for its grammaticality. The learners were required to underline the correct verb in each sentence within a specified time limit (a total of 25 minutes). This test was designed to assess the learners' ability to quickly and accurately identify grammatically correct verb usage in Maltese, and thus, to obtain their implicit knowledge.
- (ii) *Verb Conjugation Test:* This test consisted of 10 sentences, each containing a verb in brackets (see Appendix 2). The learners were tasked with conjugating the verb in the brackets correctly. This test aimed to evaluate the learners' understanding and application of Maltese verb conjugation rules.

Through these structured tests, the study aimed to gain a comprehensive understanding of the learners' proficiency in Maltese, especially their command over Maltese verb usage and conjugation. The regular administration of these tests (6 times) also allowed for tracking the learners' progress over time.

**Reflective Journals:** Participants were asked to keep reflective journals throughout the study period. These journals provided insights into the participants' subjective experiences of language learning, their perceptions of progress, and their encounters with the complexities of Maltese.

**Interviews:** Semi-structured interviews were conducted with the 35 participants at different stages of the study. These interviews allowed for a deeper exploration of the participants' learning experiences and their perceptions of the challenges and successes they encountered (Zhong, Ouyang, and Dörnyei, 2010).

### **3.3.Data Analysis**

Thematic analysis was employed to analyze the data, a technique that facilitates the identification and analysis, and interpretation of patterns or “themes” within qualitative data (Braun and Clarke, 2006). The emphasis was on the emergence of non-linear learning curves, akin to the butterfly effect in C/CT. This approach aligns with the principles of C/CT, which posits that small and insignificant changes can lead to significant outcomes (Larsen-Freeman and Cameron, 2008).

This study’s methodology, grounded in C/CT and employing a range of qualitative data collection methods, allowed for a comprehensive exploration of the chaotic yet harmonious nature of adult SLA, specifically in the context of Maltese language learning.

### **3.4.Ethics Approval**

Before the commencement of data collection, the researcher obtained Ethical Review Approval from both the University Research Ethics Committee (UREC) and the Faculty Research Ethics Committee (FREC) of the University of Malta. This step ensured that the study adhered to the ethical guidelines and standards set by the institution.

In line with the principles of person-oriented research ethics, as outlined by Cascio and Racine (2018), the participants were thoroughly informed about the study’s purpose, procedures, and rights. They were provided with consent forms and information sheets, emphasising their freedom to withdraw from the study at any point, without the need to provide a reason for their decision. The researcher also ensured that the data collection tasks were appropriate for the participants, as suggested by Resnik (2018). This consideration was crucial to ensure that the participants were comfortable with the process and that the data collected would be reliable and valid.

After the interviews were conducted, the transcripts were prepared. To maintain the privacy and anonymity of the participants throughout the process, pseudonyms were used in place of their real names, as recommended by McKenna and Gray (2018). This measure further reinforced the ethical considerations of the study, ensuring the participants’ identities were protected.

## **4. RESULTS AND DISCUSSION**

The study’s findings are presented in the context of learning curves, which are indicative of the rate at which an individual can learn over time (Aird, 2017). In the context of this study, ‘progress’ is defined as a higher score than the previous one, a ‘plateau’ is when the subsequent score mirrors the previous one, and a ‘decline’ is when the subsequent score is lower than the previous one.

### **4.1.Non-Linear Characteristic**

The results of this study demonstrated the non-linear nature of the learning curves. Most participants exhibited progress, decline, and plateaus in their performance on the grammar

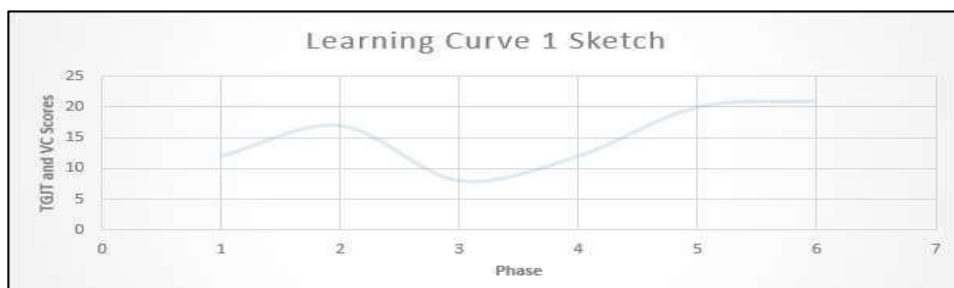
**Orchestrating Harmony in the Chaos of Maltese Language Learning through the Lens of Chaos/Complexity Theory**

tasks of the TGJT and the VC tasks over the 15-month period of the Maltese language learning assessment. This non-linear progression was evident even within the same group of participants, as shown in Figures 1 to 6. For instance, during the 4th and the 5th tests, some participants in learning curve 1 experienced progress in their TGJT scores, while others experienced a plateau or a decline. These observed learning patterns provide evidence of the principles of C/CT, which posit that SLA is not only non-linear but also unpredictable (Larsen-Freeman, 1997, 2011, 2018).

Grouping participants based on their learning curves proved to be a challenging task due to the variability in progress, declines, and plateau patterns over time. The participants' scores were categorised into six different learning curves, with notable variations observed for learning curves drawn by GeoGebra software in Figures 1 to 6.

Even minor progress or decline in raw scores, which is typically not considered statistically significant, was deemed significant in this study as evidence of one of the C/CT characteristics. This observation provides evidence of the butterfly effect in C/CT, which suggests that even small changes can lead to dramatic outcomes. The data show that there was a dramatic change as the participants continued to learn Maltese, as indicated by each participant experiencing either a decline, a plateau, or progress during the learning phases. However, their sixth test score in both TGJT and VC was higher than their first test score. This underscores the complex and dynamic nature of language learning, highlighting the applicability of C/CT in understanding these processes.

**Figure 1: The Overall Pattern of Learning Curve 1 in TGJT and VC**



**Figure 2: The Overall Pattern of Learning Curve 2 in TGJT and VC**

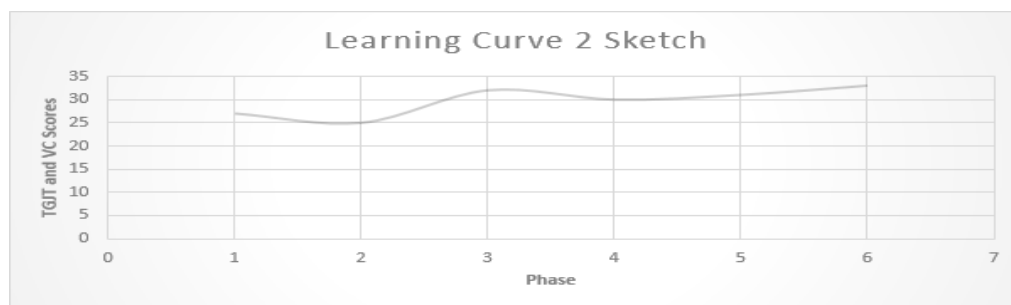


Figure 3: The Overall Pattern of Learning Curve 3 in TGJT and VC

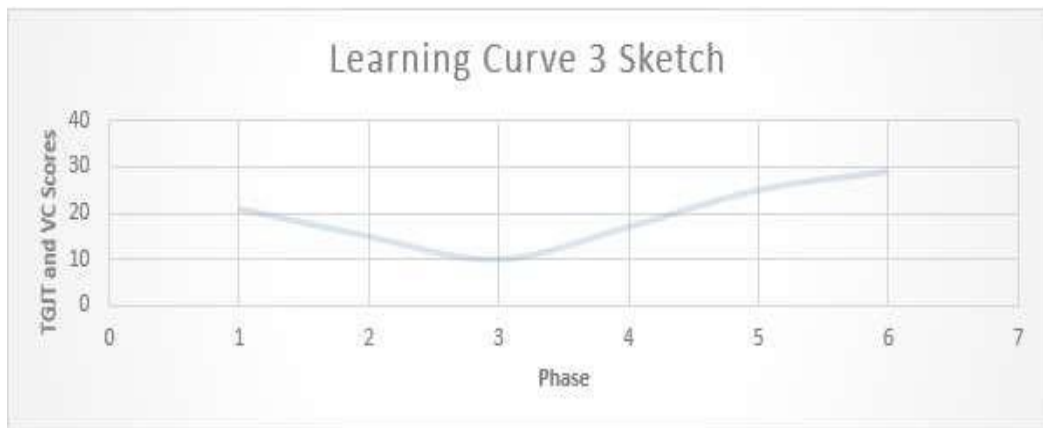


Figure 4: The Overall Pattern of Learning Curve 4 in TGJT and VC

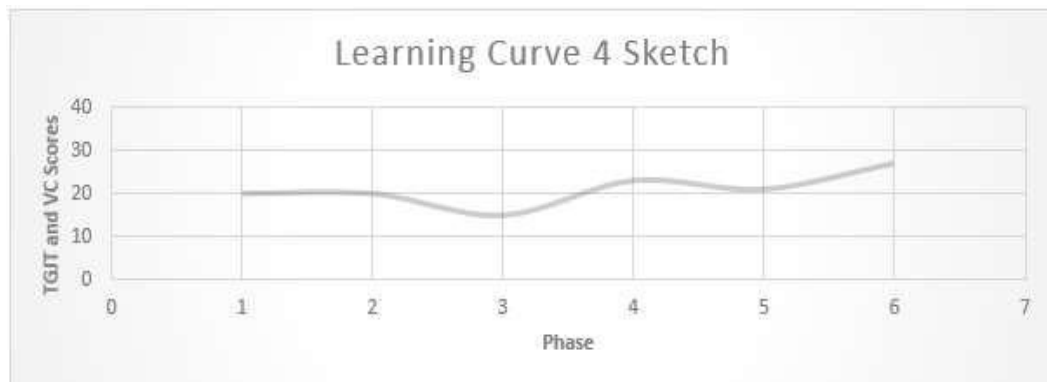
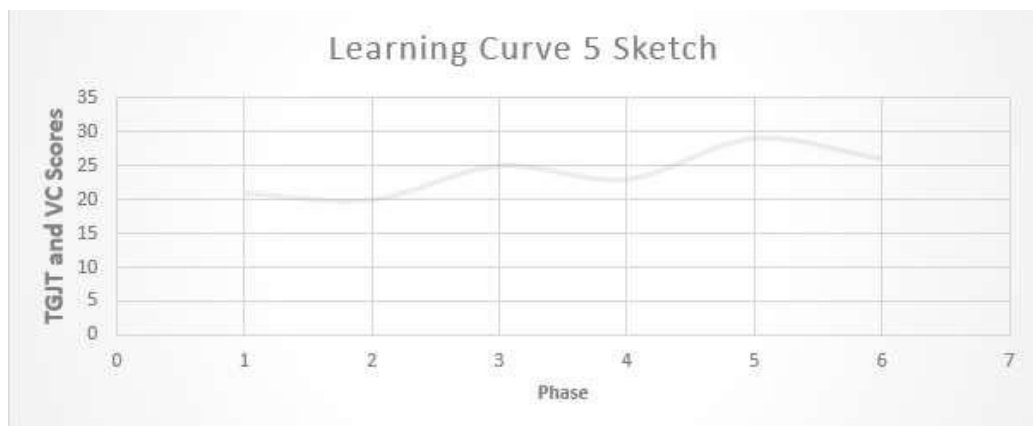
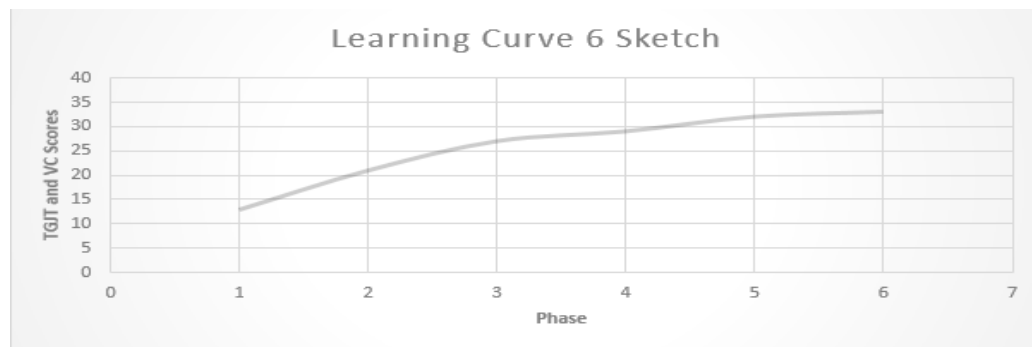


Figure 5: The Overall Pattern of Learning Curve 5 in TGJT and VC



**Figure 6: The Overall Pattern of Learning Curve 6 in TGJT and VC**



#### **4.2. Difficulties in Learning Maltese and the Application of C/CT**

To understand how C/CT applies to SLA, it was essential to explore the challenges faced by the 35 participants learning Maltese. These difficulties, which ranged from personal to environmental factors, influenced the participants' performance in the TGJT and VC tasks, leading to instances of progress, plateaus, or declines.

The presence of these challenges in Maltese learning provides compelling evidence of the prevalence of C/CT. According to C/CT, language learning is a dynamic, non-linear process that is influenced by a multitude of interconnected factors. The difficulties encountered by the participants can be seen as manifestations of these factors, contributing to the complex and unpredictable nature of language learning.

The learning difficulties will be discussed according to the themes identified in the study. These themes represent common areas of challenge among the participants and provide a structured framework for understanding the complexities of Maltese learning. Each theme will be examined about C/CT, highlighting how the theory helps to explain the observed learning curves (see Figures 1-6)

The findings of the study are organised according to these common themes, providing a comprehensive overview of the challenges of Maltese learning. By linking these findings with the underlying theories, the study offers valuable insights into the application of C/CT in Maltese learning and SLA and contributes to our understanding of the complex processes involved in adult language learning.

#### **4.3. Insufficiency of Implicit and Explicit Knowledge**

A significant number of participants reported that their low scores were attributed to the lack of exposure to the Maltese language during extended vacation periods, such as the four-month summer break, the three-week Christmas vacation, and the two-week Easter vacation. A total of 31 participants acknowledged that during their visits to other countries, they neither spoke nor listened to Maltese, thereby preventing the occurrence of implicit knowledge. Furthermore, the absence of evening classes during the holidays resulted in a lack of explicit knowledge among most participants.

For instance, one participant, a doctor from Macedonia, shared her experience during an interview. She stated, "I went back to Macedonia during the summer to visit my family and for an important medical course as I need to continuously update my knowledge in my work. I didn't have time to study or to talk to anyone in Maltese."



The core issue underlying the lack of implicit and explicit knowledge is not the absence of L2 exposure per se, but rather the interruption in exposure during the vacation period. Saylag (2014) posited that exposing an adult learner to an environment conducive to learning leads to the adaptation of L2. Conversely, a lack of exposure can result in resistance, and a learner might not be interested in learning L2. Therefore, extended breaks in exposure to the Maltese language could have led participants to a decreased knowledge of Maltese. This highlights the importance of continuous and consistent exposure in language learning, particularly in the context of adult SLA.

#### 4.4. Insufficiency of Feedback

A significant number of participants, particularly those married to Maltese-speaking partners, reported a lack of feedback as a major challenge in their language-learning journey. These participants noted that their partners, as well as other native Maltese speakers, were often reluctant to engage in conversations in Maltese. Moreover, when the participants attempted to speak in Maltese, their interlocutors would not correct their mistakes and would often respond in English instead. For instance, an English woman shared the following:

*Although I'm married to a Maltese man, I've found learning Maltese to be quite challenging. Despite my efforts to engage in conversations in Maltese, my husband and other native speakers often respond in English. They rarely correct my mistakes, which I believe is important for my language-learning process. This lack of feedback has certainly hindered my progress.*

(English woman)

This quotation reflects the English woman's experience and perspective on the study's findings. It highlights the challenges she faced due to the insufficiency of feedback and the importance of a supportive environment in language learning.

According to C/CT, learning is sensitive to feedback. Therefore, the absence of corrective feedback during interactions with native speakers might have hindered the process of learning the Maltese language. Interestingly, one participant, a Russian writer, found writing to be a more effective tool for language learning than interactions with native speakers. He stated the following:

*Many people are so wrong when thinking that you will know the foreign language better if you live in the country where this foreign language is being spoken. For instance, the Maltese people are so kind and polite that they always reply to me in English even if I talk to them in Maltese. So, it's not living in Malta which made me learn Maltese but my motivation and my ability to learn. I used to also have fun writing dialogues in Maltese; some of the dialogues were actual conversations that I have heard on the bus, at a shop or by the beach.*

(Russian writer)

These findings underscore the importance of feedback in language learning and highlight the need for supportive environments that facilitate constructive feedback and active engagement in the target language.

#### **4.5. Culture Shock and Its Impact on Learning Maltese**

Several participants identified cultural differences between Malta and their home countries as a significant obstacle to learning the Maltese language. A total of 23 participants reported experiencing culture shock and the need to adapt to the Maltese culture.

Over time, some participants, like an ICT assistant from the Czech Republic, began to feel a sense of belonging in Malta and grew more comfortable with the Maltese culture, people, food, and language. In an interview, this ICT assistant shared, “I have accepted the side that the Maltese people drive. Now for me, driving on the left is fine and I got used to it... all of this is sounding familiar to me now. Now I am finding it difficult when I return to my home country for the holidays because I feel that I am getting used to the Maltese culture.”

Adaptability to the environment, including the L2 environment, is a characteristic of C/CT. The cultural differences between Malta and the Maltese learners’ original cultures suggest that there are inherent difficulties in learning Maltese. Culture shock can be mitigated by cultural intelligence, which involves the learner becoming flexible enough to understand, listen, analyse, and reflect on the L2 culture (Aravind and Dhar Dwivedi, 2015). Learners may need to unlearn and challenge their own cultural beliefs and practices, as these could otherwise impede Maltese acquisition.

However, C/CT posits that SLA is unpredictable, and even a Maltese learner who adapts to the Maltese culture is not guaranteed to learn Maltese without encountering any problems. Furthermore, it is challenging for a teacher to assert that all Maltese learners will resolve the problem of culture shock similarly. This underscores the complex and dynamic nature of language learning and the importance of considering cultural factors in this process.

#### **4.6. Adult Learners’ Commitments and Their Impact on Learning Maltese**

A substantial number of participants, specifically 32 out of 35, expressed that they needed more time to effectively learn Maltese. These participants highlighted that learning Maltese requires a significant commitment in terms of time. However, finding the necessary time to dedicate to language learning proved to be a challenge due to various obligations such as family responsibilities, childcare, maintaining a garden, caring for pets, pursuing hobbies, or managing household chores. Some participants also perceived their age and other external factors, such as adult responsibilities, as contributing factors to their poor performance in Maltese learning.

The characteristic of openness in C/CT necessitates that external factors influencing SLA should be taken into account in the learning process (Larsen-Freeman, 2011). The issue of poor performance is further compounded by the fact that C/CT is sensitive to initial conditions. This suggests that there is a high probability that the commitments of the adult learners, as well as the transfer of their first language (L1), affected the initial conditions. Consequently, the learners might have struggled to grasp the crucial aspects of Maltese, leading to a decline in their Maltese test performance.

This finding underscores the importance of considering the unique challenges and commitments of adult learners in the context of language learning. It highlights the need for flexible and adaptable learning strategies that can accommodate the diverse needs and constraints of adult learners. It also emphasises the role of external factors and initial conditions in shaping the trajectory of language learning, as posited by C/CT. This underscores the complex and dynamic nature of language learning and the importance of considering cultural factors in this

process.

#### 4.7. Memory Issues Due to Ageing and Their Impact on Learning Maltese

A considerable number of participants, specifically 17 out of 35, expressed their readiness to abandon learning Maltese due to memory problems. They attributed their declining performance, particularly in VC tasks, to growing older and experiencing memory loss. Interestingly, they found that memory loss affected not only their Maltese learning but also their L1. This led to significant frustration among the participants, especially when they struggled to recall a word, even in their L1.

For instance, an English teacher shared his experience and stated, “Sometimes I just cannot remember the word or the conjugation of the verb... It is so frustrating! What’s worse is that sometimes I realise that I am remembering a word in Maltese but I forgot the same word in English... It shows that I am getting old. This never happened to me when I was younger.”

These findings highlight the critical period hypothesis, which suggests that SLA processes in adults are slower and less successful than in children younger than the age of puberty (Muñoz, 2017). The maturation mechanism has been proposed as a synchronous constraint on both the ability to lose a language, as demonstrated by L1 attrition and the ability to acquire L2 (Muñoz, 2017). This implies that the brain’s plasticity for both L1 attrition and SLA is age-dependent and corresponds to a qualitative change in individual learning ability (Szmalec, Brysbaert, and Duyck, 2012).

However, it is important to note that some learners performed well in Maltese tests despite their advanced ages, suggesting that factors other than memory loss can interfere with learning. In a situation where SLA presents with a progressive curve, which is declining as well as plateauing in nature, it is crucial to examine all possible factors associated with the decline in performance on an L2 test before attributing poor performance solely to age. This underscores the complex and multifaceted nature of language learning and the importance of considering individual differences and circumstances. The participants who were married to partners who were Maltese reported that their partners were not willing to speak in Maltese, and if the international participants spoke in Maltese to their partners or Maltese native speakers, the latter were not willing to correct their mistakes in Maltese and even answered them in English instead. Furthermore, one of the participants who was an English woman stated that her husband informed her that she did not even need to learn Maltese:

*My husband keeps on asking me: Why are you learning Maltese when we talk in English, and everyone here understands English? It is not an important language at all. You can speak it only in Malta. It’s just a waste of time so you won’t do household chores!*

(English woman)

According to C/CT, learning is also feedback-sensitive, and hence, learning might not have taken place when Maltese native speakers were too polite to correct Maltese learners during their interactions. A participant who was an Italian chef stated the following:

*In my profession, I’ve learned that feedback is crucial in perfecting a recipe. Similarly, in language learning, feedback is important. However, my experience*

*with learning Maltese has been quite challenging due to the lack of feedback. Despite my attempts to engage in Maltese conversations, native speakers, including my partner, often respond in Italian and avoid correcting my mistakes. This lack of feedback has certainly limited my progress in learning Maltese.*  
(Italian chef)

This quotation reflects the Italian chef's experience and perspective on the study's findings. It highlights the challenges he faced due to the lack of feedback and underscores the importance of feedback sensitivity in language learning. It also emphasises the need for a supportive environment that facilitates constructive feedback and active engagement in the target language.

#### **4.8. Frustrations stemming from Stagnation or Slow Progress in Maltese Learning**

A significant number of participants, specifically 29 out of 35, expressed frustration due to the lack of progress in their Maltese learning journey. This frustration was particularly pronounced among those who were attending evening classes and making concerted efforts to interact with Maltese native speakers, yet found their Maltese performance stagnating.

For instance, a Serbian team leader of a cruise liner shared her experience in her reflective journal. She wrote, "Even though I am an intermediate student of Maltese, I am aware that I have not achieved perfect mastery of Maltese ... My nine-year-old daughter is better than me. We started learning Maltese together, but at least she can talk and play with the other Maltese children whereas I find it difficult to talk to Maltese people and come up with a full sentence that makes sense."

The Serbian participant's comment aligns with the strange attractor characteristic of C/CT suggesting that regardless of the amount of time and effort a learner dedicates to language learning, they can still encounter unpredictable results. In this case, the unpredictable result was a lower score on the same grammar tasks than previously achieved.

The period during which an L2 learner experiences a plateau is termed as chaotic in C/CT, as the introduction of new content can disrupt the understanding of previously taught content (Safari and Rashidi, 2015). This stagnation in the learning process typically persists until the learner comprehends how to integrate the newly taught concept into the existing concepts. Therefore, it can be inferred that the Maltese learners who complained about stagnation in Maltese language learning, were not making progress because they were in the chaotic phase of SLA. These findings underscore the complex and dynamic nature of language learning, highlighting the role of individual learner factors and the importance of maintaining motivation and resilience in the face of challenges.

#### **4.9. Challenges in efficiently leveraging language transfer**

The participants reported that they found that their L1 could either facilitate or hinder their learning of Maltese, depending on the similarities or differences between the two languages. For instance, learners who were already familiar with Arabic found it easier to grasp Maltese grammar. This is an example of positive language transfer, where knowledge of one language aids in the learning of another. Similarly, those who knew Italian found it easier to learn Maltese vocabulary.

An Indian nurse learning Maltese stated, "Coming from a background where I primarily

spoke Hindi and English, I initially found Maltese grammar quite challenging. However, as I continued my studies, I began to see patterns and similarities that helped me understand the structure of the language better.”

A Kenyan nun learning Maltese shared, “As a native Swahili and English speaker, I found Maltese vocabulary to be quite different. But with time, patience, and lots of practice, I was able to expand my vocabulary and improve my language skills.”

These participants highlight the individual experiences of language learners and the challenges they face when learning Maltese. They underscore the importance of adaptability and feedback sensitivity in SLA, as well as the potential benefits and challenges of language transfer. It is a testament to the complex interplay between a learner’s first language and Maltese as a second language.

However, not all language transfers were positive. Some learners reported negative consequences due to the differences between their L1 and Maltese. This is in line with the work of Alonso (2016) and August and Shanahan (2006), who suggested that while the L1 can facilitate SLA, it can also lead to negative transfer if the two languages are significantly different.

For instance, a Palestinian builder said, “As a builder, I understand the importance of a strong foundation. The same applies to language learning. My native language, Arabic (Levantine Arabic), has helped me in learning Maltese, but there were times when the differences between the two languages led to confusion.”

The study also highlighted the importance of adaptability, self-organization, and feedback sensitivity in SLA, characteristics associated with C/CT. To effectively learn a second language, learners need to adapt to the new linguistic environment and be open to feedback from native speakers or peers. This feedback, along with other interacting factors, contributes to the development of a learner’s interlanguage, a concept referred to as self-organization (Norris, Davis and Timpe, 2017).

An Italian chef explained, “In cooking, adapting to new ingredients and techniques is crucial. Similarly, when I started learning Maltese, I had to adapt to its unique linguistic environment. The feedback from native speakers was like the secret ingredient in my language-learning recipe.”

The Palestinian builder’s and the Italian chef’s comments reflect the individuals’ experiences and perspectives on the study’s findings. They highlight the complex interplay between a learner’s first language and Maltese as a second language and the role of individual adaptability and feedback in shaping the learning process. They also underscore both the potential benefits and challenges of language transfer in SLA.

#### **4.10. Constraints linked to personality traits, particularly extroversion and introversion.**

The participants mentioned the impact of personality traits, specifically extroversion and introversion on language learning. Some participants, who identified themselves as extroverts, credited their progress in learning Maltese to their outgoing nature. They were unafraid of making mistakes and continuously practised speaking Maltese with their classmates, teachers, and native speakers. This aligns with the findings of Lightbrown and Spada (2013), who suggested that extroverts tend to learn more aspects of a second language than introverts.

However, the study also found instances that contradicted this general trend. Several participants, despite identifying as introverts, reported improvement in their language skills. This

challenges the common assumption that extroversion necessarily leads to better language learning outcomes.

One participant shared her personal experience as an introvert. She admitted to feeling shy when interacting with native Maltese speakers. Despite her introverted nature, she reported an improvement in her performance on the Maltese grammar tests, attributing this to her habit of reading Maltese books and listening to the radio and podcasts in Maltese. She also mentioned that introverts tend to be selective about their interactions, which could influence their language-learning process. This aligns with the C/CT butterfly effect, which suggests that initial conditions, such as being an introvert or an extrovert, can significantly influence the learning process.

The study underscores the unpredictable and complex nature of SLA, as highlighted by C/CT. While extroverts are generally found to learn an L2 faster due to their willingness to interact with native speakers (Lightbrown and Spada, 2013), some participants who considered themselves to be introverts, reported that they obtained high scores in Maltese tests due to their attentive listening skills, which might have enhanced their implicit knowledge of the Maltese language.

This study emphasises that predicting a learner's performance based on their personality is challenging, further illustrating the complexity of SLA. It highlights the potential influence of both extroversion and introversion on language learning among adult learners, suggesting that success in SLA is not solely dependent on these personality traits.

#### **4.11. Language Teaching Methods**

Thirty-three participants stated that the overreliance on traditional teaching methods by teachers had a negative impact on their Maltese learning process. These participants mentioned the following traditional methods which included practices such as students remaining seated throughout the lesson; teachers distributing extensive lists of verb conjugations and Maltese vocabulary translated into English; teachers writing on the board while expecting passive absorption from the learners; a general lack of student engagement in classes; teachers insisting on rote learning and not encouraging active engagement during lessons through activities like role play and group work; and teachers failing to provide positive feedback and not effectively linking previous knowledge with current learning.

These methods were deemed boring and ineffective by 95% of the participants. The participants expressed a preference for learning methods that catered to different learning styles, including visual, auditory, reading, and kinesthetic.

A German Teacher said, "Being a German language teacher, I've seen firsthand how traditional teaching methods can hinder the learning process. The passive absorption of information and rote learning are outdated and are not effective in engaging students or facilitating language acquisition. I believe in the importance of catering to different learning styles and fostering an environment where students are actively engaged in the learning process."

Similarly, an Italian salesman argued, "In sales, adaptability and feedback are key to success, and so is language learning. Traditional teaching often fails to engage learners effectively. I experienced this when learning Maltese. The lessons were often monotonous, with little room for class participation."

These quotations reflect the individuals' experiences and perspectives on the study's findings. They highlight the need for a shift from traditional teaching methods to more interactive and engaging approaches to language learning. They also underscore the importance of feedback

sensitivity in SLA, which is a characteristic of C/CT. For effective learning, Maltese learners must receive feedback and be actively engaged in lessons, enabling them to identify and improve areas of weakness. This finding highlights the need for a shift from traditional teaching methods to more interactive and engaging approaches to language learning.

### **Limitations of the Study**

The study encountered several limitations, with a significant one being the dwindling number of participants. The research began with a group of 39 learners of Maltese, who were enrolled in an intermediate-level Maltese course across three different lifelong learning institutions in Malta. Throughout the study, the participant count gradually decreased due to various reasons such as discontinuation of the course by some learners, the unwillingness of a learner to participate in the research, and a learner leaving Malta indefinitely. This consistent reduction in the sample size poses a significant limitation as it restricts the applicability of the study's findings to the broader population of international learners of Maltese. The small sample size may not accurately represent the larger population, thus limiting the generalizability of the results.

Another limitation pertained to the data collection instruments used in the study. The researcher encouraged the participants of the reflective journals to write openly and candidly, without imposing strict restrictions on their entries. While this approach aimed to foster a free exchange of ideas, it also led to some unexpected outcomes. At times, the participants noted factors impacting their Maltese learning that contradicted their comments during the interview. This discrepancy posed a challenge for the researcher, who had to rely heavily on the information provided by the participants in their interviews and reflective journals. Consequently, the researcher had to record the participants' perspectives without the ability to verify their responses.

In summary, the study faced limitations related to participant attrition and the uncontrolled nature of the data collection instruments, which impacted the study's findings and their generalizability. These limitations highlight the complexities involved in conducting research in the field of second language acquisition.

### **Recommendations**

There could be several recommendations for future research in the field of second language acquisition, particularly for learners of Maltese as a second language.

One recommendation is to conduct further research to identify the most effective teaching techniques for Maltese learners to learn Maltese verbs. This could be achieved through action research, a reflective process that allows educators to explore and address issues in their educational settings. By examining the impact of various teaching methods on the learning of Maltese verbal tense and elements across different Maltese as a second language group, researchers could assess the relevance and effectiveness of these techniques.

Another recommendation is to focus on the concept of perceived language distance, a component of the Crosslinguistic Influence theory. Language distance refers to the perceived differences between a learner's L1, and the L2 they are trying to learn. It is thought to influence the ease or difficulty with which learners acquire and master an L2. By studying this concept, researchers could gain insights into how the perceived similarities or differences between

languages affect the language learning process.

These recommendations highlight potential areas of exploration that could contribute to our understanding of second language acquisition and inform the development of more effective language teaching strategies. They underscore the complexity of language learning and the multitude of factors that can influence this process.

## 5. CONCLUSION

The study concludes by affirming the C/CT in the context of SLA especially Maltese learning, portraying it as a process that is complex, dynamic, chaotic, unpredictable, adaptive, open, self-organizing, and non-linear. It further reinforces that SLA aligns with the C/CT's butterfly effect, sensitivity to feedback, exhibits characteristics of a strange attractor, and adheres to a fractal pattern.

The research identifies a range of cognitive and sociocultural factors that influence the success, proficiency, and achievement of learners acquiring Maltese. These factors encompass various areas such as the similarities and differences between the Maltese language and the learner's first language, the lack of both implicit and explicit knowledge, culture shock, the commitments of adult learners, memory loss due to ageing, challenges faced during the initial stages of learning Maltese, and personality-related limitations, particularly extroversion and introversion.

Other factors include difficulties in interacting with native Maltese speakers, insufficient language-related support from Maltese partners, and the teacher's overreliance on traditional teaching methods. The study also highlights the importance of exposure to the Maltese language, social connections, and memory-related issues. Despite these challenges, the research concludes that SLA progresses over time. This underscores the resilience of language learners and the intricate, multifaceted nature of the language learning process.

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