

The relativisation strategies in the production of Maltese advanced learners of Italian L2

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Abstract: Maltese and Italian exhibit parametrically different choices regarding restrictive relative clause formation. This study focuses on the interlanguages of non-native, intermediate, and advanced Maltese students studying Italian as a second language in a formal context. Relative clauses were classified and analysed following Keenan and Comrie's (1977) noun phrase accessibility hierarchy (NPAH), a theoretical framework adopted to examine the structure of relative clauses. Given that relative clauses are islands for extraction in Italian, this study also incorporates findings from a self-paced experimental design adapted from Beltrama and Xiang (2016) to investigate the extent to which a [-wh-movement] L1 (Maltese) and a [+wh-movement] L2 (Italian) influence L2 processing of complex relative clauses in the final stage of L2 acquisition. The results indicate that the acquisition process of relative clause syntactic structures is affected by the level of L2 proficiency and frequency of L2 syntactic structures. As proficiency increased, the output of advanced learners became more similar to native speakers, with the advanced group exhibiting native-like attainment. This research contributes new evidence in three main areas: (i) how the noun phrase acceptability hierarchy, as a theoretical framework, complements an experimental methodology design; (ii) what factors contribute to describing and interpreting degrees of language acceptability in experimental designs of complex syntactic structures; and (iii) the possible factors that lead non-native language learners to acquire and produce complex syntactic structures that go beyond the limit of possible experience while making developmental progress in both the accuracy and processing efficiency of relative clauses.

Keywords: Italian L2 acquisition, noun phrase accessibility hierarchy (NPAH), restrictive relative clauses, language processing and interlanguage

Introduction

This study explores the morphosyntax of relative clauses in the interlanguage competence (IL) of highly proficient bilingual non-native speakers of Italian who began learning the language at age 11 in a formal context. Previous research suggests that IL grammar differs based on the native language

background and age but follows a specific order in acquiring relative clause structures. This study investigates whether Maltese learners follow a common trajectory in producing relative clauses and whether nativelikeness can be achieved even if learning starts post-puberty and occurs in a formal setting.

The challenge for Maltese learners in processing relative clauses is to identify the syntactic role of relativised items, which depends on the relativisation strategy. Interpreting and producing an Italian restrictive relative clause necessitates the establishment of a connection between the *gap* and its filling element (in contrast to Maltese which is filled with a pronoun), which is not immediately adjacent because of the long-distance dependency of the structure, as demonstrated in the following instances in Italian (1) and Maltese (2):

1. *la ragazza a cui Franco ha dato il libro [alla ragazza].*
Noun.fem. *la ragazza*, rel. pron. *a cui*, Franco, Verb. *to give a past tense 3rd person singular noun. Masc. il libro.*
The girl to whom Franco gave the book.
indirect object relative clause in Italian
2. *it-tfajla li Franco taha il-ktieb.*
Noun. fem. *it-tfajla*, rel. pron. *li*, Franco, Verb. *to give the past tense 3rd person singular res. pron. fem. to her -ha*, noun. Masc. *il-ktieb*
The girl whom Franco gave her a book.
indirect object relative clause in Maltese

In Italian, the relativisation strategy involves the use of a *gap*, whereas, in Maltese, an explicit *resumptive/anaphoric pronoun (-ha)* is used to indicate the semantic-syntactic function of the relativised element (*the girl*). These strategies were first identified by Keenan and Comrie (1977) and are often classified into two major categories: [+case], as in Italian, and [-case], as in Maltese, because of the use of an invariable relative pronoun (*li*) throughout all syntactic positions in the NPAH (see Table 1). For instance, the use of a *resumptive pronoun* in Maltese ensures that the related items on the syntactic positions of direct and indirect objects, obliques, and objects of comparison are unequivocally expressed. In Italian, only substandard varieties preserve resumptive pronouns (Cerruti, 2016). Moreover, Maltese does not have *pied piping* or *preposition stranding*, and the highest subject restriction rule prevents the *resumptive pronoun* from being used in subject relative clauses.

The aim of this study is not to delve into the controversies surrounding the relative pronoun case, as these are not central to the study's purpose. This study aims to provide an analysis of the interlanguage (IL) system utilised by Maltese learners in the production of relative clauses, with a particular focus on the tokens used to differentiate between the two primary strategies, namely *gap* and *resumptive pronouns*.

Syntactic Position	Restrictive Relative Clause in Italian and Maltese	Relativisation strategy
Subject <i>The man who killed the snake.</i>	L'uomo che_ ha ucciso il serpente. Ir-raġel li_ qatel is-serp.	<i>gap</i> <i>gap</i>
Direct Object <i>The snake that the man killed.</i>	Il serpente che l'uomo ha ucciso_. Is-serp li r-raġel qatel.	<i>gap</i> <i>resumption</i>
Indirect Object <i>The woman to whom the man gave the book.</i>	La donna a cui l'uomo ha dato il libro_. Il-mara li r-raġel taha l-ktieb.	<i>gap</i> <i>resumption</i>
Oblique <i>The friend with whom I went abroad.</i>	L'amico col quale ho fatto un viaggio_. Il-ħabib li sifirt miegħu.	<i>gap</i> <i>resumption</i>
Genitive <i>The man whose dog ran away.</i>	L'uomo il cui cane è fuggito _____. Ir-raġel li ħarablu l-kelb.	<i>gap</i> <i>resumption</i>
Object of comparison <i>The woman from whom my sister is taller.</i>	La donna dalla quale mia sorella è più alta_. Il-mara li oħti hi itwal minnha.	<i>gap</i> <i>resumption</i>

Table 1: Relativisation strategies along the accessibility hierarchy in Italian and Maltese

Keenan and Comrie's (1977) hierarchy of accessibility of noun phrases claims that from left to right, the relative clause construction follows an implicational pattern that reflects its processing order and degree of complexity: *subject* > *direct object* > *indirect object* > *oblique* > *genitive* > *object of comparison*. The authors found that the *resumptive pronoun* strategy is frequently connected to lower positions in the hierarchy depending on the grammatical status of the *resumptive pronoun* in a language. For instance, in languages where the *gap* is mandatory in the standard form (such as Italian and English), the function assumed by the *resumptive pronoun* is considered a repair strategy (*last resort*) during the comprehension and production of highly taxing contexts.

The formation of relative clauses entails a series of interconnected grammatical and nongrammatical decision-making processes, the time course of which remains poorly understood. Ross (1967) highlighted the specific constraints that apply to long-distance syntactic dependencies in relative clauses, which he referred to as *syntactic islands*. These constraints restrict the movement of words within the clause, preventing them from relocating to islands. For instance, they have been a topic of interest in the acquisition and processing of accounts of relative clauses.

Research suggests that *resumptive pronouns* can ameliorate syntactic island violations (Ross, 1967; Sells, 1984). Table 2 demonstrates examples of how relativisation strategies are employed in syntactic island environments in Maltese, Italian, and English.

<i>Wh-island</i>	Tuo fratello, a cui mi domando che storie abbiano raccontato, era molto preoccupato. *Your brother, to whom I am afraid of the possibility that they told everything, was worried. Huk, li nistaghgeb xi stejjer setgħu qalulu, kien tassew inkwetat. (<i>resumption</i> 3rd person masc. singular- <i>u-</i> to him - <i>ħuk-brother</i>)
<i>Complex noun phrase</i>	*Questo incarico, che non sapevo la novità che avrebbero affidato a te. *This task that I didn't know the news that they would entrust to you. Din il-biċċa xogħol, li ma kontx naf li setgħu tawha lilek. (<i>resumption</i> 3rd person fem. singular- <i>ha-her</i> - <i>biċċa xogħol-task</i>)
<i>Subject island</i>	Questo autore, di cui so che il primo libro è stato pubblicato recentemente. *This author, by whom I know that the first book has been published recently. Dan l-awtur, li naf li l-ewwel ktieb tiegħu gie ippublikat milux. (<i>resumption</i> 3rd person masc. singular- <i>u-</i> to him - <i>awtur-author</i>)

Table 2: The use of the resumptive pronoun in syntactic islands in Italian and Maltese

In contrast to Italian (Rizzi, 1982), the Maltese *resumptive pronoun* is insensitive to the *island* context.

The Maltese language's acquisition of relative clauses and *island* effects has not been researched in either L1 or L2 settings, with most studies focusing on lower proficiency levels. Only one study has addressed the relativisation strategies used by Maltese L2 Italian learners, which was conducted on the effects of Italian media on Italian language learning in Malta (Caruana, 2003). For instance, this study aims to examine and identify relativisation patterns for three key objectives: (i) to examine the grammaticality of the output produced and the role of resumptive pronouns in relative clause syntactic island contexts; (ii) to validate Keenan and Comrie's hierarchy in the output of advanced Maltese learners of Italian L2; and (iii) to determine whether L2 advanced learners can build abstract structural representations. This study is unique in that it divides Maltese participants into three groups based on the Maltese scholastic system, resulting in split data.

The Study

The current study proposes a shift from the notion that only native speakers can provide suitable language models to focus on linguistic forms in production, specifically in the context of relative clauses. Even native speakers adhere to a formal trajectory influenced by external language learning circumstances. For instance, this approach facilitates the understanding of data within an applied field by employing an analytical model that examines the biological and cultural factors that contribute to the acquisition of human language.

The initial hypothesis was that the NPAH would only capture the communicative aspects and declarative knowledge of the interlanguage possessed by participants studying Italian in a formal context and thus were instructed to follow the target norm. Consequently, a mixed-method approach was adopted, including a questionnaire, experimental task, and corpus analysis, to determine whether and how second-language learners construct implicit knowledge of the target language's output in relative clauses.

Qualitative data consisted of written essays. The University of Malta, which oversees and serves as the authoritative body for state examinations, contributed a dataset of written samples from which a probability sample of 200 essays was chosen. Preliminary data cleansing involved the removal of incomplete essays. Employing a systematic sampling technique, 30 essays were selected for each advanced proficiency group (*SEC*, *IM*, and *AM*) by randomly designating a starting point within the larger sample and then selecting one essay script every ten counts until the desired sample size was attained.

For quantitative data, a *two-forced-choice* task was adapted from Beltrama and Xiang (2016) to examine relativisation strategies within syntactic islands. The *SEC* group was excluded from the task and no time limit was set for completion. A control group of native speakers was used for two main objectives: first, to compare response patterns with Beltrama and Xiang's (2016) findings and second, to assess critical period effects and determine whether post-pubertal learners of Italian can attain native-like competence in a second language.

A questionnaire was distributed to Maltese subjects with advanced linguistic competence (*IM* and *AM*) together with the experimental task. Divided into thematic clusters, the questions aimed to explore contact with Italian outside the school context, including mass media, the internet, relatives, trips to Italy, and work and reading materials. The straightforward design of the research materials made it easier for participants to complete them in less than an hour.

The Participants

Italian is a popular foreign language choice for Maltese secondary school students, who typically study it for five academic years with three forty-minute lessons per week. After completing secondary school, the students sit for a Secondary Education Certificate Examination (*SEC*) administered by the University of Malta and should they wish they can continue to study it at *IM* and *AM* level. The *SEC*, *IM*, and *AM* levels are equivalent to the QCER levels B1/B2-C1, although this equivalence has not been formally established. *SEC* levels are based on competencies aimed at the three QCER levels.

Post-secondary institutions offer *IM* and *AM* courses to students aged 16-18 years, culminating in the local examinations administered by the University of Malta. The exams for *IM* and *AM* levels cover speaking, reading, writing, and listening skills, but also include a literary component that assesses students' proficiency in the Italian language and their ability to analyse one or more literary works.

For the *two-forced-choice* task of this study, Maltese participants were recruited through formal higher education institutions, with thirty-four individuals (17 from each competence group, *IM* and *AM*, all fluent in English) agreeing to participate in the study. Participants of the native speakers group came from the southern regions of Italy and were selected through snowball sampling; for instance, the first primary source helped nominate and recruit other potential primary data sources. The age of the Italian subjects ranged from 20 to 45 years; nine native speakers (six from Sicily and three from Lazio) lived, worked, and/or studied in Malta, while the remaining eight native speakers worked and lived in Italy (six from Marche and two from Umbria). Snowball sampling does not involve a designated target population, as in the current study, where the primary variable was nativeness. Consequently, a potential bias in the Italian sample may be related to the educational level of the participants.

The Research Ethics Committee of the University of Malta reviewed and approved the invitation forms, and each participant provided voluntary consent after being informed of the study's purpose.

Design and Stimuli of the Experimental Task

Beltrama and Xiang's (2016) study was chosen because it involved native English and Italian speakers and the stimuli of the authors were deemed to fit the objective of this study. The aim of this study was not to reproduce the research conducted by Beltrama and Xiang (2016), because the task design and administration procedure varied from those of the authors, making it impossible to directly compare the final results with their findings.

The changes made to fit the objectives of the current study were as follows: (1) A pen and paper administration (in Beltrama & Xiang, 2016, the stimuli were audio-recorded); (2) for the *two levels of embedding*, the stimuli were presented with a picture (in the original study, no pictures were used); (3) the *non-lo so* (do not know) option was included in both parts of the experimental tasks to avoid unintended bias and guessing; and (4) for the *three levels of embedding*, the *pied piping* construction was included after Perpiñán’s (2020) study, although it was not part of Beltrama and Xiang’s research objective.

The experimental task included stimuli (a sample set of stimuli in Figures 1 and 2) crossing one island type in two tasks (*forced-choice fill-in-the-blank* and *full-sentence forced-choice task*). The task had a 2×2 factorial design with two independent variables (*dative/accusative context vs. island/non-island*), thus obtaining a manipulation *within item*, participants were asked to choose the more acceptable option of the pair. In the *island* context, the *gap* or *resumptive pronoun* is located in the object’s position (an illicit extraction site). By contrast, in the *non-island* context, the *gap* and *resumptive pronoun* were in an object position close to the end of the sentence (a licit extraction site).

Guarda l’immagine e per ogni frase, sottolinea la risposta (tra le due alternative in rosso) che secondo te è più adatta al contesto a sinistra. Se sei indeciso/a puoi indicare la risposta in verde (non lo so)

L'affetto dei gatti	
	1. Quello è il bambino che il gatto che ha molta fame _____ una leccata. ha dato - gli ha dato - non lo so
	2. Quello è il bambino che il gatto che ha molta fame _____ a lungo. ha leccato - l'ha leccato - non lo so
	3. Quello è il bambino che il gatto che _____ una leccata ha molta fame. ha dato - gli ha dato - non lo so
	4. Quello è il bambino che il gatto che _____ a lungo ha molta fame. ha leccato - l'ha leccato - non lo so

Figure 1: Part 1 of the forced choice fill-in-the-blank task at two levels of embedding

Because every stimulus contained the pronoun *che* (that), equivalent to the Maltese *li*, both of which lacked case characteristics, it was necessary to infer the meaning from the context. This is in contrast to the *pied piping* effect, which was present in the *full-sentence forced-choice task* and involved a relative pronoun strategy (Figure 2) with case properties.

Task
Seconda Parte

Per ciascuna situazione scegli l'opzione che, secondo te, suona meglio in italiano

		<u>Scegli tra 1, 2 , non lo so</u>
Situazione A	Questo è l'anziano a cui abbiamo sentito che l'infermiera che lavora al terzo piano ha dato un bacio.	①
	Questo è l'anziano che abbiamo sentito che l'infermiera che lavora al terzo piano gli ha dato un bacio.	②
	-----	non lo so
	Questo è l'anziano a cui abbiamo sentito che l'infermiera che ha dato un bacio lavora al terzo piano.	①
	Questo è l'anziano che abbiamo sentito che l'infermiera che gli ha dato un bacio lavora al terzo piano.	②
		non lo so

Figure 2: Part of the full sentence forced choice task at three levels of embedding

Data analysis was performed using the Statistical Package for Social Sciences (SPSS), and Fisher's exact test was used to evaluate the data. Additionally, the Kruskal-Wallis statistical test was used to investigate differences between groups regarding the utilisation of relativisation strategies (*gap/resumptive pronoun*). The Wilcoxon test was then applied to assess the effect size and identify patterns in responses between pairs of items with comparable and varying criteria: *gap*, *resumptive pronoun*, or *do not know*.

Results Written Production

Patterns observed on different syntactic positions along the NPAH for each proficiency level

The production of relative clauses by Maltese learners displayed a Hierarchy of Accessibility patterns, as illustrated in Table 3. As proficiency levels increased, more intricate linguistic forms emerged, demonstrating an interlanguage progression. The *gap* strategy was employed to construct all relative clauses. The detection of relativised forms in *SEC*, *IM*, and *AM* subjects, including those closer to standard production, indicates successful acquisition of the initial form.

Frequency distribution in % along the Accessibility Hierarchy in the Maltese Corpus

Subject	Object	Indirect Object	Oblique complement	Genitive complement	Object of comparison
68%	17%	-	14%	1%	-
SEC/IM/AM			IM/AM	AM	

Table 3: The proportion in % of restrictive relative clauses that were observed for each proficiency level

No tokens were recorded for the syntactic positions of the *indirect object* and *object of comparison*.

The full array of relative clauses extracted from the corpus of advanced Maltese learners is shown in Figure 3.

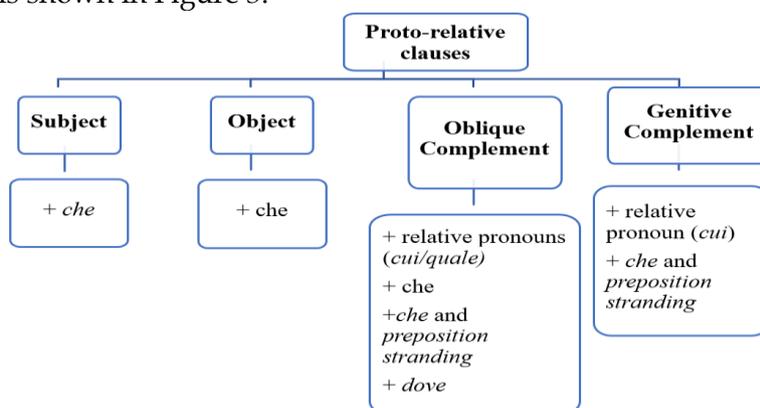


Figure 3: Relative clauses in the interlanguage of Maltese advanced learners of Italian L2

Proto-relative clauses, presentational relative clauses and formulaic expressions

The subject syntactic position is preceded by *proto-relative* clauses, as indicated by Sato (1990) and Giacalone Ramat (1999), who emphasised the significance of examining second-language (L2) data by accounting for not only target and non-target language data but also constructions that share the same functional role. The subjects use formulaic expressions (3) that are constructed utilising the pseudorelative (4-7), which is sourced from the essay title or is altered in a shortened form (8).

These constructions offer valuable insights into the processes involved in acquiring new constructions.

- 3) Quindici mila spettatori *con cui me* poteva credere (SEC_5)
- 4) Io sono dispiaciuto *per quello che è successo* (SEC_4)

- 5) Io non e piace *di litigati* e sono dispiaciuto per *quello che è successo* (SEC_6)
- 6) Oggi sto scrivendo per spiegarti che io sono dispiaciuto di *quello che è successo* (SEC_7)
- 7) Io non vorrei litigato con te e molto dispiaciuto per *quello che è successo* (SEC_12)
- 8) So che hai telefonato me tanti volte sul mio cellulare ma *che è successo è c'è molto traffico perché più avanti ha successo un brutto incidente* (SEC_1)

Additionally, presentational relative clauses (9-12) introduced by the *c'era* are also prevalent in *SEC*, accounting for 3% of instances, with 77% in *IM* and 20% in *AM*. These structures are preferred because of their independence from the antecedent and, despite their different forms, they retain the same discourse function.

- 9) So che hai telefonato me tanti volte sul mio cellulare ma *che è successo è c'è molto traffico perché più avanti ha successo un brutto incidente* (SEC_1)
- 10) *c'è persone che* abusano altre gente verbale sul social media (IM_10)
- 11) *c'è tanti tipi diversi di tecnologia che* usiamo (IM_13)
- 12) *ci sono gente che* prenda una opportunità di fare vantaggio sul ragazzi (IM_25)

It has been noted that in the production of certain subjects, formulaic expressions, such as prepositional constructions (13-17), were employed across all proficiency levels.

- 13) Tu sei l'unica *persona io parlato con* perché tu sei molto gentile e intellettuale (SEC_19)
- 14) *Io ho ascolto di notizia di tu* sono stato molto triste e *il ragione è perché* io ho lasciato messaggio (SEC_20)
- 15) Un svantaggio molto comune sul aree low cost e le cadute e le tragedie *che sono molto famosi per* (IM_20)
- 16) Io penso che questo è uno dei valori *che* dobbiamo stare da largo (AM_7)
- 17) In questo giorno la gente compra anche cose *che ha bisogno di* perché per loro lapriorità è un capriccio (AM_10)

At an advanced level of language proficiency, the employment of certain constructions tends to diminish because of the nature of students' language production, which is characterised by more complex structures along the accessibility hierarchy, as outlined in Table 3.

Relativisation strategies for the oblique syntactic position

Significant discrepancies emerged among the various proficiency levels in oblique syntactic position. The utilisation of *che* was preferred over the relative pronoun strategy, and *preposition stranding* was also present.

Four functional subcategories were delineated: instrument/medium, place, purpose, and mode (Figure 4).

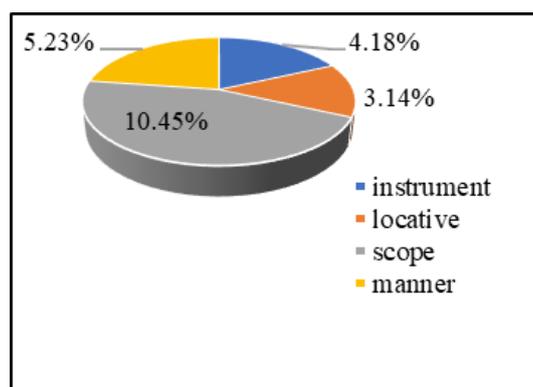


Figure 4: *The subcategories for the oblique syntactic position*

The relative pronoun strategy was primarily employed in the instrument category. This is demonstrated in the example, *un coltello con cui l'umanità si toglie la propria vita* (a knife with which humanity takes its own life) (AM_11). According to Bernini (1989, p. 91), the locative *dove* (18-21), diaphasically marked, serves as a second focal point for the manifestation of adverbials and acts as an interpropositional connector in higher positions of the accessibility hierarchy delineated by Keenan and Comrie (1977). This suggests that the encoding of oblique syntactic positions with *dove* is wider in the substandard varieties. The use of this construction is common in the production of Maltese learners at all proficiency levels, although it may not always be used with non-locative nouns.

- 18) Chopped kids è una competizione *dove* ci sono quattro bambini (SEC_9)
- 19) Altri invece utilizzano i social network per scopo di lavoro *dove* ad esempio un sarto di abiti si può farsi pubblicità gratis tramite un account in una dei svariati social network (IM_11)
- 20) Anche tramite i social network le persone possono sentire un furto d'identità *dove* altre persone si spacciano per altri dietro dei profili falsi dei social network (IM_11)
- 21) Il Black Friday è diventato un appuntamento ogni anno *dove* tutti i negozi fanno un sconto in più del normale (AM_10)

The construction of relative clauses becomes increasingly challenging as the distance between the *gap* and relativised elements increases. The utilisation of

relative pronouns in *long-distance* dependencies, taking into account the number of interveners between the nominal head and the *gap*, was demonstrated by the *AM* group of students. Conversely, the *IM* group tended to produce *short-distance* dependencies (Table 4).

un processo	[con il quale	la	cambia	_____]		
		lingua		con il processo		
1	2	3	4	1		
			<i>Short-distance dependency IM_17</i>			
una società	[nella quale	tutti	sono comodi	e liberi	_____]	
					società	
1	2	3	4	5	6	1
			<i>Long-distance dependency AM_30</i>			

Table 4: Long distance dependencies in the production of Maltese advanced learners of Italian L2

Relativisation strategies for the genitive syntactic position

Given that *AM* students successfully acquired *long-distance dependencies*, they were able to form relative clauses in a *genitive* position (n = 2). While utilisation of this strategy may incur processing costs (22-23), it is still possible that advanced-level learners convey the same function through *preposition stranding* (23).

- 22) Nel passato se qualcuno non poteva trovare il libro *di cui* aveva bisogno nelle librerie di Sliema o Valletta, avrebbe dovuto chiedere a uno dei negozi di portarlo dall'estero (*AM_5*)
- 23) In questo giorno la gente compra anche cose *che* ha bisogno *di* perché per loro la priorità è un capriccio (*AM_10*)

The Questionnaire

The questionnaire showed that *AM* students were more likely to have been exposed to Italian than *IM* students. This exposure enables students to seize opportunities to enhance their language skills and apply them to their academic pursuits. The proficiency in Italian among *AM* participants suggests the advantage of their increased exposure to mass and social media, as well as reading Italian newspapers and magazines. *AM* students (88%) watched Italian TV more daily than *IM* students (53%); viewing duration varied: 43% of *AM* students watched for 3-5 hours, while 73% of *IM* students watched for less than an hour.

IM students tended to be more inclined towards net casting than toward broadcasting, as they were more digitally connected than their *AM* counterparts (33% vs. 29%). In addition, they use the Internet to enhance their language input. Reading preferences during leisure time varied between the two groups, despite both stating a preference for online Italian content and spending less time with traditional media such as books and magazines. While 50% of *AM* students reported reading three- four times per week, 53% of *IM* students claimed never to read. Maltese students often employ Italian in informal settings to converse with friends and family, although they tend to prefer chat applications on social media platforms (with a utilisation rate of 38% for *AM* vs. 55% for *IM*).

The data show that Maltese subjects display institutional literacy, which is more pronounced in *the AM*. School norms and standard practices characterise this. Vernacular literacy, which includes various forms of writing and reading outside social institutions, is common among *IM* students. Consequently, speech patterns influence writing and lead to the acceptance of oral language traits among both native speakers and L2 learners, as observed by D’Achille (2016) and Cerruti (2016).

Results Experimental Task

Patterns observed for gap and resumptive pronoun options across different levels of embedding and levels of proficiency

The statistical significance of the *island* effect was demonstrated at *two* and *three embedding* levels. The graphical representation below depicts the correlation between the proficiency levels of the research participants and the corresponding patterns of responses across varying levels of embedding.

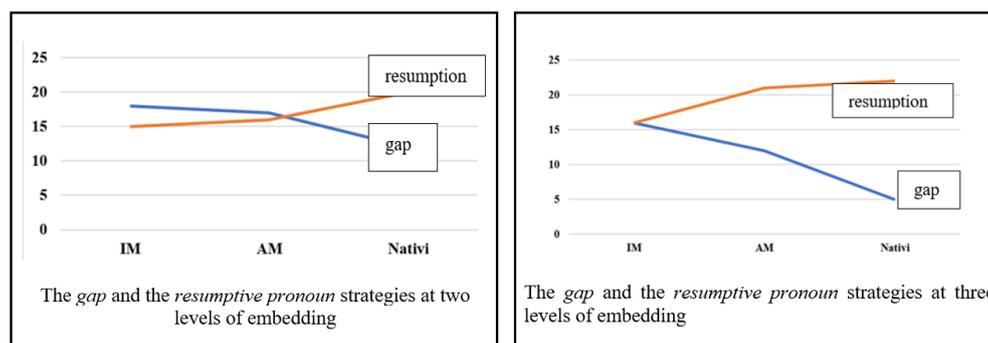


Figure 5: *The use of gaps and resumptive pronouns at two levels and three levels of embedding*

The graphs in Figure 5 depict noticeable differences in proficiency levels. The data indicated a consistent increase in resumption for both advanced and native speakers. In the *within-item* analysis, the pattern of responses was

statistically significant for both native speakers and *IM* at both embedding levels (*non-island* and *island*). While native speakers tended to use resumptive pronouns in island contexts, *IM* participants tended to leave *gaps* in these contexts. The Kruskal-Wallis test revealed a significant difference between the native speakers' and *IM* participants' responses ($H(2) = 9.86, p = 0.002$).

The Fisher test detected significant differences in the responses of the three groups of subjects (native speakers, AM, and IM) ($p = 0.014$) only for item 6 (*accusative non-island*).

- quello è l'interrogato che il compagno che siede in prima fila ____ di nascosto

(*ha aiutato – l'ha aiutato – non lo so*)

The Wilcoxon test result, expressed as a z-score, revealed a significant difference between *accusative* contexts (*non-island* vs. *island* at the two levels of embedding) for items 2 and 4 ($p = 0.023$), 6 and 4 ($p = 0.004$), and 6 and 8 ($p = 0.033$) for *native speakers*, suggesting that the statistical significance of the *island* effect was evident at the highest level of proficiency as the utilisation of *resumptive pronouns* in *island* contexts increased.

Patterns observed for the 'non lo so' option across different levels of embedding and levels of proficiency

The *non lo so* option registered a notable increase in the patterns of native speakers. In the *accusative island* context at the two levels of embedding, the native speakers chose the *non lo so* option more frequently than the Maltese participants by a ratio of almost 4:1 (*native speakers: AM*; the *IM* participants did not use this option). However, the z-score revealed a significant difference between the *dative* context (*non-island* vs. *island* at two levels of embedding) for items 1 and 7 ($p = 0.004$) and 5 and 7 ($p = 0.02$) for *IM* participants, indicating that in *island* contexts, participants at the lowest level of proficiency continuously posited a *gap*. At the three levels of embedding, the option *non lo so* was predominantly utilised by native speakers.

The amelioration effect of the resumptive pronoun in island contexts

There has been a notable increase in the use of the resumptive pronoun among both native speakers and Maltese subjects (AM) in *island* contexts. Fisher's test was significant in the *dative island* context (item 2), with a value of $p = 0.001$.

- Questo è l'anziano a cui abbiamo sentito che l'infermiera che ha dato un bacio lavora al terzo piano.

(*Item 2 dative gap three levels of embedding*)

- Questo è l'anziano a cui abbiamo sentito che l'infermiera che **gli** ha dato un bacio lavora al terzo piano.

(*Item 2 dative island resumptive pronoun three levels of embedding*)

Fisher's test revealed a distinction between proficiency groups based on participants' selection of either a *gap* or a *resumptive pronoun*. The native speakers and AM subjects chose the *resumptive pronoun* option more than the IM subjects. Even though the AM pattern was closer to that of the native speakers, the Kruskal-Wallis test revealed significant differences between *native speakers*: AM $H(2) = 14.82$, $p = 0.001$ and *native group*: IM $H(2) = 14.82$, $p = 0.001$. The median value of the distribution of IM subjects ($Md = 1$) was lower than that of native speakers ($p = 0.001$) with a value of $Md = 2$, and that of AM subjects ($Md = 2$) was equal to the value of natives ($p = 0.001$) with a value of $Md = 2$.

A Wilcoxon test for non-independent samples was conducted on *dative island* context items 3 and 7 (*two levels of embedding*) and items 2 and 4 (*three levels of embedding*) to assess the significance of the *island* effect in demonstrating how the groups differed as the levels of embedding increased.

The results of the Wilcoxon signed-rank test indicated that the median post-test ranks were statistically significantly lower than the median difference between *the two levels of embedding* and *three levels of embedding*. The pattern for *island* contexts changed for *native* and AM subjects. However, it remained invariable for IM subjects, who kept positioning a *gap* in island contexts and increased the tendency from *two levels* of embedding to *three levels* of embedding: item 2 at *three levels of embedding* and item 7 at *two levels of embedding* ($z = -2.208$, $p = 0.027$). The effect size indicated the observed effect that resulted in a minimum effect, and the result revealed a significant value with a negative difference ($T = 96$, $p = 0.027$, $r = 0.22$); whereas the Wilcoxon test revealed a significant difference between item 4 at three embedding levels and item 7 at two embedding levels ($z = -2.342$, $p = 0.019$) with a negative difference and an effect size of $T = 100$, $p = 0.019$, $r = 0.23$. The effect size of the Wilcoxon test was determined following the Cohen index (1988) with the following values: 0.20 (minimum), 0.50 (medium) and 0.80 (large).

The *within-item analysis* (*dative context island two levels of embedding* vs. *dative context island three levels of embedding*) run by the Wilcoxon test and expressed as z-scores revealed a significant difference between items 7 and 2 ($p = 0.014$) for native speakers. The Wilcoxon test revealed a statistically significant relationship between *dative context isola* at two levels of embedding and *dative isola* at three levels of embedding, with a reduction in the pattern of responses between items 7:2, $z = -2.460$, $n = 17$, and $p = 0.004$, with a negative difference and magnitude of size (almost medium effect size) $r = 0.42$. The median value was 2 for both items. An almost statistically significant result was found between items 7 and 4 ($p = 0.058$) for the AM participants. The Wilcoxon test revealed a statistically significant relationship between the *dative island context* at *two levels* of embedding and *the dative island context* at *three levels* of

embedding, with a pattern of responses between items 7:4, $z = -1.897$, $n = 17$, $p = 0.058$, showing a negative difference and a size amplitude (almost minimal to medium effect size) $r = 0.32$. The median (median) decreased from item 7 ($Md = 2$) to item 4 ($Md = 1$).

Discussion

This study shows that Maltese learners follow a hierarchical structure to form relative clauses, as proposed by Keenan and Comrie (1977). The use of less marked elements in written production suggests that learners progress through stages, starting with *proto-relative* clauses at the *SEC* and *IM* levels and advancing to more complex syntactic positions in the hierarchy where long-distance dependencies are established at the *AM* level. Ferreira and Swets (2005) argue that output is generated incrementally in small portions when individual words are encountered. Early complex constructions were typically lexically specific, meaning that they were linked to formulaic expressions based on frequent usage (Diessel & Pickering, 2006; Diessel & Tomasello, 2005). This explains why *preposition stranding* preceded *pied piping* (Bardovi-Harlig, 1987) in this study, as seen in examples such as *parlare con*, *sono famosi per*, and *ho bisogno di* (talking with, they are famous for, I need to). These findings indicate that Maltese learners can produce linguistic forms corresponding to their current level of grammatical proficiency.

It is important to note that not all explanations follow universal patterns, and certain aspects of language acquisition must be evaluated from a comparative perspective. For instance, the potential transfer for *preposition-stranding* cases can only be evaluated effectively from English to Italian as a second language given that the Maltese subjects in the study are bilingual. Based on the available evidence, there is little indication of competition between grammatical structures in a written corpus, which suggests that the hypothesis of grammatical competition should not be the starting point. Rather, it should only be considered a *last resort* when the Maltese learner is unable to identify any distinguishing characteristics among the available options. Although transfer is not the primary objective of this examination, the instances of *preposition stranding* observed in the sample cannot be attributed to the impact of the formal input. However, they support interlanguage's inherent natural order of acquisition.

Even with improved language proficiency, automaticity did not completely disappear in the current study. In the experimental task, *IM* participants selected the *pied piped* dependency at *three levels* of embedding, which was supported by Perpiñán's (2020) argument that the complexity of the extracted element (preposition+wh word) makes it more salient and referential. This facilitates its integration into the discourse through d-linking. For instance, language-specific exceptions such as syntactic islands require more extensive

exposure to input, leading to a longer time required to reach near-nativeness, as demonstrated at the *AM* level.

The two methodological approaches provided a comprehensive analysis of advanced learner variety, which is often considered homogeneous. The analysis revealed asymmetrical outputs from the written corpus and the experimental tasks. The written corpus exhibited higher adherence to the norm for relative clauses categorised by noun-phrase accessibility. This is consistent with the Italian language system and can be attributed to the nature of the corpus, which consists of written texts for exams with subjects who have undergone a guided education program to produce standard forms (without the use of resumptive pronoun tokens). The descriptive text type required by the essay task may account for the absence of tokens for the syntactic positions of the indirect object and object of comparison in the Maltese corpus.

The experimental tasks produced consistent outcomes, demonstrating that Maltese learners at an advanced level (*AM*) exhibited resumptive pronoun usage similar to that of native speakers, suggesting an implicit knowledge of the target language. In contrast, interlanguage at the intermediate level (*IM*) displayed opposite patterns, indicating that learners were still in the process of setting parameters and were prone to over-generalisation.

Resumptive pronouns have been found to exhibit island amelioration effects, leading to a decrease in the acceptability of a *gap* (Morgan & Wagers, 2018) in languages such as Italian. The results of the experimental tasks were consistent. They showed a close resemblance to native language patterns in the responses generated at the advanced (*AM*) level, suggesting that Maltese learners possess implicit knowledge of the target language and use a *resumptive pronoun strategy* in *island* contexts. As comprehension typically precedes production (Carroll, 2007), the use of these *last-resort* strategies (and instances of overgeneralisation in the written corpus) indicate that output processing involves a combination of accessibility and production strategies. Linguistic elaboration extends across interlanguages and is based on the consideration of possible constructions that serve the same function. For instance, precursor constructions reflect acquisitional processes and patterns that may not be evident through acceptability judgment experimental tools alone.

Although resumptive pronouns are not typically used in languages that do not allow them, they can still aid comprehension, according to Beltrama and Xiang (2016). The authors suggest that resumptive pronouns help to identify the resolution site, provide agreement cues to retrieve the correct filler, and aid in constructing a locally coherent parse. They also found that this effect was magnified when there was a change in the level of embedding. Although the task used by Beltrama and Xiang (2016) was modified for this study, the same conclusion was reached for the Maltese *AM* level and native Italian speakers.

The authors found that participants judged sentences with resumptive pronouns on *islands* to be more comprehensible than their counterparts with *gaps* in both English and Italian. These results are noteworthy, especially given the *non lo so* responses that native speakers increasingly used from *two to three* levels of embedding. Although this option did not have a statistically significant effect, it is worth considering for descriptive purposes. Based on the findings of this study, it is feasible to propose ideas regarding the basic notion of competence in the target language, as highlighted by Berruto (2003), considering the potential variation in native speakers' levels of schooling and the Italian diasystem, which allows for the utilisation of a *resumptive strategy* (Cerruti, 2016). In addition, the findings cast light on the fact that the (un)acceptability of a sentence should be understood in terms of intelligibility. This study suggests that choosing a *non lo so* option does not necessarily indicate reduced competence. This indicates that there are competing effects between language and production systems. Coinciding with Perpiñán's (2020) findings, native speakers consider sentences ungrammatical, whereas L2 learners do not have a robust intuition regarding their acceptability. In the case of a choice with a *resumptive pronoun* (at the native and *AM* levels), the participants found a strategy that circumvented the restrictions to obey the principle of structure dependence and make the sentence intelligible. The current state of affairs favours a balance between the need for rich structures that convey information, and language acquisition and production. Maltese subjects, especially at the *IM* level, have yet to achieve this balance.

This decision to include the *non lo so* option was determined by Payne's (1951) suggestion to use middle responses to obtain more precise opinions on a specific topic. The recurring pattern observed among the various respondents indicated that their choices were intentional rather than random. The consistent preferences exhibited by the participants and the intricate patterns observed across multiple respondents suggest that the choices made were not random. The task included items that, in some cases, violated the system and the norm to be able to compare the outcome between the native competence and the competence of Maltese subjects who were exposed to formal and informal input in Italian. The two types of violations presented in the task are or could be attributable and differently sensitive to the theme of the input; a less controlled input (e.g., television or similar) could provide examples of relative clauses that violate the rule (*non-island* contexts) rather than examples of relatives violating the system (*island* context). Therefore, the violations of the two contexts presented in the task do not have the same implications, as reflected in the Maltese subjects of Italian L2. Convergence with native speakers (especially as in the case of *AM* subjects) does not automatically imply that all syntax representations are completely complete in the sense of target-like; however, it is a fact that the *IM* showed a different pattern in the *island* context, while their written data coincided with universal processing

mechanisms. Following the observations of Traxler et al. (1996, 1998), Perpiñán (2020, p. 10) emphasised, “these sentences are experimental and are quite implausible, and we know that plausibility is a very relevant factor when interpreting sentences in real time”.

Island configurations can potentially examine intricate syntactic structures and evaluate universal grammar (Belikova & White, 2009). However, the efficacy of this approach and the methodologies adopted remain a topic of ongoing investigation because of the challenge of devising an integrated model for comprehension and production processes (Rastelli, 2013). Several studies have demonstrated that *forced-choice* tasks surpass gradient-rating tasks and other methods in detecting distinctions between experimental conditions (Myers, 2009; Schutze & Sprouse, 2014; Sprouse & Almeida, 2013). Indeed, the facilitation effect of intrusive resumptive pronouns in English has only been detected in studies based on self-paced reading (Hofmeister & Norcliffe, 2013; Hammerly, 2019), comprehensibility judgement (Beltrama & Xiang, 2016), and *forced-choice tasks* (Ackerman et al., 2018).

In the present study, the complexity of the stimuli included was such that the acceptability of *the resumptive pronouns* was predictable. Moreover, previous research conducted by Meltzer and Asscher (2015) revealed different acceptability ratings for resumptive pronouns in auditory presentation compared to the visual presentation of items. This suggests that there is also an interaction between the modality of presentation and the occurrence of resumptive pronouns, with the decrease in acceptability being smaller in auditory presentations than in visual presentations.

The current study aligns with Beltrama and Xiang’s (2016) findings regarding the use of relativisation strategies despite modifications in the task presentation. Maltese learners were required to read the stimuli themselves and choose one of three options (*gap*, *resumptive pronoun* or *non lo so*). However, at the intermediate level (*IM*), participants did not show sensitivity towards *island* contexts even when the context was provided through a picture at two levels of embedding. This contradicts Beltrama and Xiang’s (2016) finding that when test sentences are preceded by context, resumptive pronouns can indeed facilitate processing. Cerruti’s (2016) research revealed that resumptive pronouns are more commonly used in informal spoken settings but less common in written contexts. Maltese participants displayed distinct patterns in the experimental task and did not produce resumptive pronouns in the written corpus. Therefore, future research should consider the effect of intonation on endophasic reading.

At the intermediate level (*IM*), syntactic and intonation differences may have influenced the performance of the participants; such disparity was not evident in research using material presented orally (Cardinaletti & Starke, 1999), like

the task presentation in Beltrama and Xiang (2016). Future research with more participants is needed to establish the factors that contribute to the gradient of acceptability, which can involve non-grammatical factors which indicate that performance preference is related to structural complexity and processing, comprehension, and efficiency. During the experimental task, *IM* learners tended to undergeneralize the rules, which could be explained by the principle of economy, as they appeared to be positing *gaps* in *island* contexts, although island-violating dependencies with resumptive pronouns were still perceived as unacceptable by participants despite their marginal improvement effect (Farby et al., 2010; Keshev & Meltzer-Asscher, 2021; Tucker et al., 2019; Perpiñán, 2020).

This suggests that they are leaving *gaps* in island contexts, but still perceive *island-violating* dependencies with *resumptive pronouns* as unacceptable, although these might indicate improvement (Farby et al., 2010; Keshev & Meltzer-Asscher, 2021; Perpiñán, 2020; Tucker et al., 2019). This indicates the need to understand how intermediate interlanguage grammar gapping is more economical to the point that it becomes a default form avoiding a strategy shift, thus rejecting *resumptive pronouns* inside islands, although they accepted them in non-islands. rather than spelling a *resumptive pronoun* which widely claims its facilitative effect and induces a processing advantage. Therefore, the acceptability of *resumptive pronouns* at the *IM* level was affected neither by syntactic embedding (*two levels of embedding* vs. *three levels of embedding*) nor by *the island* context. This finding is incompatible with the previous *last-resort* analysis associated with the *resumptive pronoun* strategy. In light of the written corpus, it is evident that the overuse of structures is overcome once learners have acquired semantic and distributional properties. Although only a limited range of data were examined in this study, it is anticipated that these results will explain L2 learners' non-target-like behaviour to a larger extent. It is widely acknowledged that syntactic operations involve mapping (transfer) at the interface because interfaces generally cause problems in L2 acquisition (Sorace, 2011).

If competence is limited and/or determined by structure-depth factors, it is a much more debated issue than language use and communicative function, which can be probed using a questionnaire. Although human language is characterised by an infinite array of lengthy sentences, the precise point at which interfaces diverge is a subject of ongoing debate, particularly concerning *resumptive pronoun strategy*. If the tendencies observed in L2 learners are more indicative of uniformity through the building blocks of interlanguage rather than solely through distance dependencies, it can be inferred that they acquire complex and nuanced aspects of the language that they could not have obtained solely from the L2 environment.

Learners' prior experiences affect the production of constructions with the lowest level of competence (*SEC level*). The study involved participants learning Italian in a formal context, and the questionnaire assessed language input and contact outside school. For the highest level of competence (*AM level*), formal and informal input scaffolded experiences as indicated by the questionnaire. The results of the questionnaire indicated that external factors, such as naturalistic input and motivation, significantly influence linguistic competence and interlanguage development, similar to acquiring natural languages (Balari & Lorenzo, 2015; Mendevil-Girò, 2020). This process involves various elements and dynamics, including filler-gap dependencies (Chesi & Moro, 2014). *AM* participants were more likely to distinguish themselves from their *IM* counterparts in terms of language input through mass media, social media, and reading, as indicated by their questionnaire responses, possibly because completing the course was more likely to lead to a career.

Swain (1985) proposed the concept of comprehensible output to emphasise that not only exposure to input is important but also the production of that input received, which in turn leads to more direct or indirect input. From a pedagogical perspective, it is reasonable to assume that teaching recommendations will have a significant effect. The Maltese corpus contains instances of students not practising specific language forms or structures in their output, but rather becoming aware of the need for them (Van Patten, 2003, p. 69). Although the development of language skills can explain how students learn to speak clearly, it does not address the formation of implicit language systems. The majority of Maltese subjects manifest abstract information and a *monitor effect* which cannot be obtained solely through declarative knowledge (Van Patten, 2003, p. 145). This suggests that relativisation and universal principles related to the formation of these structures are not solely due to linguistic transfer (Gass & Selinker, 2001, p. 145).

Time plays a crucial role in triggering a monitoring system (Zafar, 2009). Maltese learners generally resort to monitoring, particularly in written contexts reflecting the acquisition-learning divide. Given the function of monitoring as a learning process, the monitor hypothesis aligns with the acquisition-learning divide. Highly efficient monitor users can achieve a level of proficiency that will never be as high as that attained by those who acquired and internalised the language, which may explain the disparity between the most advanced levels of proficiency (*IM* vs. *AM*), particularly during the experimental task. The focus on *resumptive pronouns*, especially in teaching and learning, should not be disregarded. By focusing on output writing, students can identify language knowledge gaps and the disparity between their language knowledge and that of the target language. Observing output can help teachers assess and offer appropriate guidance. Moreover, if production cannot be coerced by a teacher, the individual acquisition system relies on input and formal guidance (Clark, 2009), and learners commence to produce language

and align with universal patterns. According to Rastelli and Zuanazzi (2015), non-native speakers may find it challenging to use complex relative clause constructions without explicit or implicit knowledge of the target language's morphosyntactic rules. However, Costa et al. (2012) state that the explicit and enhanced input typical of formal settings has positive effects, while in the case of relative clauses on oblique syntactic position, guided instruction affects production from *il coniglio che la bambina lo accarezza* (the rabbit that the little girl caresses him) to *il coniglio a cui la bambina dà una carezza* (the rabbit to which the little girl gives a caress) (Guasti, 2002).

Despite the clear disparity among the levels of competence, at the *SEC* and *IM* levels, students could communicate using a partially learned system. Given that the interpretation of sentences (even simple ones) can sometimes be misconstrued, the observed output is often a result of performance, rather than a lack of grammatical competence. Therefore, when evaluating problematic sentences or complex syntactic contexts, such as syntactic islands, it is essential to consider the communicative function and context in which they are used and refrain from classifying these issues solely based on grammatical rules.

The level of proficiency affects the accessibility hierarchy and syntactic island processing. Moreover, additional teaching time should be dedicated to complex syntactic structures if the input is a real driving force (Corder, 1967). The human brain can only process comprehensible input, which is essential and crucial for language acquisition. However, this is insufficient. It is when input is not considered as a stimulus and response that the acquisition-learning divide becomes meaningful. Input must be distinguished between what is intended for production and what is intended for comprehension. Research has led to a more sophisticated understanding of input (since Krashen, 1977), encompassing not only the quantity and quality (i.e., modifications and adjustments) of input but also the output (production) required for successful interlanguage development. Complex structures should be introduced at lower levels of competence without expecting their use in production. To acquire a form-meaning pair with varying structures, exposure to partially filled or filled components and general linguistic patterns is necessary at different levels of abstraction. Real-life and naturalist input/exposure are crucial in language acquisition, and it is essential to attain a production similar to that of native speakers in a non-native language (Pliatsikas & Chondrogianni, 2015).

Conclusion

This research offers valuable insights into the implications of classroom instruction on the mastery of complex syntactic structures as well as the relationship between interlanguage processing and production. In particular, this study sheds light on a vital area of interlanguage and builds upon prior research concentrated on Italian in the Maltese context.

This study provided new data from two perspectives: (i) repair strategies in the interlanguage of participants who studied a language in a formal context and were nearing ultimate attainment; and (ii) the role of input. Taken together, and undeniably, all the participants are not innately different, and the primary factor discovered in this study that differentiated the *AM* level from the *IM* level (and eventually the Maltese participants and native speakers) was the extent and calibration of language contact. According to Pliastikas and Chondrogianni (2015), second language acquisition, as well as its associated neural mechanisms, is an evolving process that is significantly influenced by the degree of language immersion. These principles apply to language learners who are nearing their ultimate proficiency level, which is why the results of this study indicate that L2 learners can eventually attain native-like competence, even when learning the language in a formal setting, as language use is actively engaged. Further research is warranted to further explore this topic.

Therefore, the sample size of this study should not be overlooked. Nevertheless, a clear pattern emerged from both quantitative and qualitative data, especially as the participants' preferences in the writing task began to resemble those of native speakers and the pattern of responses in the experimental task. It is essential to stress that these conclusions were derived from an in-depth examination of highly complex sentence structures rather than relying on general impressions of the information, which is customarily the case when discussing interlanguage data.

The outcomes align with theories that propose repair strategies at interfaces (Boeckx & Lasnik, 2006), which are distinct from models based on the grammatical system, as revealed by this study's findings. However, a comprehensive investigation of these accounts is beyond the scope of this study. Nevertheless, while it is important to consider and acknowledge the preference for minimal information load for both native and non-native speakers and accept that the principle of universality is fundamental in explaining acquisition processes, it is equally true that topic or complex syntactic structures and *island* phenomena have not yet been conclusive because of the lack of a unified picture of the phenomenon (Boeckx, 2003).

Further research should investigate and establish methodological strategies grounded in solid theoretical foundations, not only in linguistic studies but also in other disciplines (Chesi & Moro, 2014). To integrate all fields of study, it is essential to determine the nature of knowledge (Matthews, 2006) and its connection to linguistic competence, and to refine the scope and theory of the language faculty. As Spinner and Gass (2015) argue, there is a reciprocal relationship between second language research and linguistic theories, where researchers of second language acquisition should refer to linguistics for

concepts and models to formulate hypotheses, conduct data analyses, and draw conclusions. Moreover, linguistic theorists can enhance their comprehension of linguistic principles and models by examining the results of second language acquisition research.

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