

Restrictive relative clauses in Greek Heritage speakers in the US

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This paper investigates the production of restrictive relative clauses (henceforth RRCs) in Heritage Greek in contact with US English. In Greek, RRCs are introduced either by the pronoun *o opios* ‘the who’ which agrees with the nominal head it modifies and is preferred in formal registers; or by the un-inflected complementizer *pu* ‘that’, which appears mostly in colloquial speech. In English, RRCs are introduced by the non-agreeing pronouns *who* and *which* and by the complementizer *that*. The findings suggest that both groups favour the production of *pu* RRCs but we cannot attribute the overuse of *pu* RRCs by HSs to English interference. There is no clear evidence that *o opios* is preferred in formal registers by monolinguals and we argue that HSs avoid *o opios* RRCs as they have difficulties with establishing agreement between nouns and modifiers. This is corroborated by their use of the English non-agreeing pronouns *who* and *which*.

Keywords: heritage speakers; Greek; Restrictive Relative Clauses

1. Introduction¹

The present study investigates the production of restrictive relative clauses (henceforth RRCs) in two varieties of Greek, namely monolingual Greek and Heritage Greek in contact with American English (henceforth AE). Our work contributes to a rather unexplored linguistic field, namely the study of heritage Greek by speakers born and raised in the US. We use the term heritage speakers here to refer to mostly second-generation immigrants exposed naturalistically to a minority language in early childhood in an environment where a majority language is spoken, meaning that they acquire 2L1s (Valdés 2001; Polinsky 2018). Research in this area has shown that their proficiency in their heritage language (HL) varies and usually these speakers lag behind monolinguals or speakers of the baseline language they were exposed to (Montrul 2016; Polinsky 2000, 2011). The variation observed relates to the fact that acquiring a heritage language depends on multiple factors such as the age of onset to bilingualism, the past and current input, the generation of their parents or guardians, the years and the hours of formal education

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speakers receive in the heritage language, etc. (Unsworth et al. 2014; Flores et al. 2017; Daskalaki et al. 2019, 2020; Kupisch 2019 among others).

There are several studies of various heritage languages in the US, but Greek has not been the focus of much research, in spite of the fact that Greeks massively emigrated there in the second half of the 19th century and in the 20th century after WWII (Chasiotis 2006: 22–24). The few existing studies contain observations either on the characteristics of the Greek communities in the US or on various grammatical phenomena which seemed to deviate from post WWII era's norm (Triantafyllidis 1952, 1963, Seaman 1972). Gavriilidou & Mitis (2019) recently profiled the community of Greek heritage speakers in Chicago, Illinois, reporting that heritage speakers in the US had been given opportunities to be systematically in contact with and embrace their HL in contrast to the Greek heritage speakers' community in Russia. Regarding the educational input, Gavriilidou & Mitis (2021) report that most of the Greek heritage speakers in the US attend afternoon courses in Greek and Saturday schools organized by the different Greek Orthodox parishes, something that leads to the need of a more structured and updated teaching curriculum. In the present paper, we focus on Greek heritage speakers recruited in Chicago, Illinois, and in New York City, whose characteristics match those of the aforementioned studies.

Our focus is on RRCs, as previous studies on relative clauses have pointed out that these are problematic for heritage speakers, object relative clauses being even more difficult (see Polinsky 2018 for a cross-linguistic overview): specifically, it has been reported that heritage language acquisition patterns like L1 acquisition, meaning that subject relative clauses are acquired earlier than object relative clauses. In general, heritage speakers show difficulties in the acquisition of sentential structures with long-distance dependences.

The paper is structured as follows: Section 2 presents some background on Greek and English RRCs while in Section 3 the factors of register and modality are introduced and analysed. In Section 4, the research questions alongside with the predictions are presented; Section 5 and its subsections exhibit the methodology, the setting of the present study and the participants' pool. Finally, in Section 6, the results of the narration task under the scope of different levels of formality and modality are displayed, followed by an interim discussion based on our research questions. Section 7 presents our general conclusions.

2. Relative clauses in Greek and in English

In both English and Greek (McCawley 1981, Radford 2019, Holton & al. 1997), relative clauses are classified in restrictive, non-restrictive and free. In this section, we will focus on RRCs in Greek and English, which function as nominal modifiers.

2.1. Restrictive Relative clauses in Greek

Greek RRCs come in two types. The first type is introduced by the *wh*-pronoun *o opios* lit. “the who”, which is inflected for gender, case, number, (1). The second

type is introduced by the indeclinable complementizer *pu* “that” (2). *Pu* bears no inflection and is compatible with nouns in all genders and cases. Both strategies are used interchangeably to modify +/-animate nouns.

- (1) *O anthropos* *o opios* *agorase ena pagoto*
 the man.M.NOM.SG who.M.NOM.SG bought an ice cream
ine psilos (MG)
 is tall
 ‘The man who bought an ice cream is tall.’

- (2) *O anthropos* *pu* *agorase ena pagoto* *ine psilos* (MG)
 the man.M.NOM.SG. that bought an ice cream is tall
 ‘The man that bought an ice cream is tall.’

The presence of one of the these two relativizers is obligatory for the formation of a RRC, but their distribution differs. Several authors have pointed out that the distribution is regulated by structural as well as stylistic and pragmatic factors (Mackridge 1985, Holton et al. 1997). *Pu* is taken to be more frequent than the wh-pronoun. On the other hand, *o opios* is less frequent and has been argued to be preferred in formal environments and specifically written texts (Mackridge & Philippaki-Warbuton 1997: 212, Holton et al. 1997: 440).

2.2. Restrictive Relative clauses in English

English also has two overt relativization strategies: RRCs are formed either on the basis of a wh-pronoun, *who(m)/which* or the complementizer *that*. In addition, and unlike Greek, English has so-called bare relatives as well, (3c), examples from Huddleston et al. (2017: 1034).

- (3) a. *He’ll be glad to take the keys which you do not want.* (EN)
 b. *He’ll be glad to take the keys that you do not want.*
 c. *He’ll be glad to take the keys you do not want.*

As Huddleston et al. (2017: 1048) detail, *who* is preferred for human antecedents, while for antecedents denoting animals *who* and *which* are both possible, whereby *which* is the default option. *Which* is preferably used for antecedents denoting things and *that* can be used for both things and people.

3. The role of register and modality

In view of the fact that in Greek, the choice between the complementizer and the pronoun is regulated by modality and formality, we need to briefly describe our understanding of these terms and how this may influence heritage speakers’ production of RRCs. As is well known, register and mode are two intertwined features of discourse. Beginning with the latter there is a clear distinction between

oral and written modality; historically speaking oral languages are considered to have priority over written ones. Furthermore, both modalities can represent different registers, whereby the written ones can be further distinguished by the text variety they exhibit as Biber and Conrad (2009) defined it, namely genre. This is relevant for our study, as Holton et al. (1997) have claimed that the Greek RRCs introduced with *pu* appear predominantly in informal registers while *o opios* RRCs in formal as mentioned in Section 2.1.

Register can be defined in relationship with the mode and the tenor of discourse (Halliday 1978). As Biber and Finegan (1994) claim register refers to a language variety associated with situational uses. Furthermore, register is perceived as a continuum in speakers' repertoire, and it varies from the unconscious and natural production until angular and stilted speech production (Labov 1972).

Concerning bilingualism and heritage speakers, it has been claimed that these speakers usually lack features that are transmitted via formal education such as register variation, and they are not exposed to communication situations other than within the family (Dressler 1991, Chevalier 2004, Rothman 2007). Thus, heritage speakers tend to exhibit register levelling by generalizing particular structures in different communication situations.

4. Research questions and predictions

In this paper, we aim to explore whether there are quantitative differences in the production of the two types of Greek RRCs between monolingual controls and heritage speakers. Based on Polinsky's (2011) and Coskun Kunduz & Montrul's (2022) observation concerning the divergent performance of adult heritage speakers, attributed to attrition, we expect heritage speakers' performance on RRCs to be different from monolinguals' productions. Regarding the production of *pu* RRCs, we predict that this type will be preferred by heritage speakers over the *o opios* RRCs. Given the fact that heritage speakers face difficulties establishing agreement patterns (Alexiadou et al. 2021), *pu* RRCs will be favoured as they are introduced with an indeclinable complementizer which shows no inflection (RQ1).

Furthermore, we investigate if there are any differences in production with respect to relativization strategies employed by heritage speakers regarding the register and modality variation. The notion of register levelling occurs in heritage speakers' linguistic repertoire as they gradually narrow the different registers and the reason being their exposure to restricted everyday topics with familiar interlocutors (Dressler 1991: 101–102; Chevalier 2004) (RQ2).

Finally, in case we find differences regarding RQ2, we explore if these deviations can be attributed to cross-linguistic influence from AE. Examining AE RRCs productions by our Greek heritage speakers, we juxtapose them with the relevant Greek RRCs produced in the same register and modality (RQ3). If the use of *pu* is triggered by the presence of *that* in AE, we expect them to produce similar numbers of *pu* and *that* RRCs in Greek and AE respectively.

5. Methodology and procedure

In order to elicit naturalistic data in oral and written modality in two distinct communication settings, we employed the “Language situations” methodology (Wiese 2020). This set-up provides comparable data in both the heritage and majority language in two different levels of formality and in two modalities (data sets 2x2). The data were elicited by native speakers of Greek and AE giving particular emphasis in the respective setting. The elicitation of the formal setting took place in an office with an elicitor using the standard language and honorifics. The participants were sitting opposite the elicitor, keeping a physical distance from each other. In contrast, the elicitation in the informal setting part took place in a different office, where the two interlocutors were sitting close to each other, with a different elicitor casually dressed and very talkative. Thus, we created 4 communication settings (formal spoken, formal written, informal spoken, informal written) and by combining them we were able to generate 8 elicitation orders for every language which in total accumulate to 16 different elicitation orders for both the heritage and the majority language. Half of our HSs were tested first in their heritage language and afterwards in their majority while the other half of our HSs were tested first in their majority language and then in their heritage. This particular design prevents our participants from biases. As monolingual controls took part only in one language, they were tested in 8 elicitation orders, as shown in Table 1.

Table 1: Elicitation orders

| | Order 1 (if/sws) | Order 2 (if / wss) | Order 3 (if / sws) | Order 4 (if / wsw) |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| informal | Spoken | Written | Spoken | Written |
| | Written | Spoken | Written | Spoken |
| formal | Spoken | Spoken | Written | Written |
| | Written | Written | Spoken | Spoken |
| | Order 5 (fi / sws) | Order 6 (fi / wss) | Order 7 (fi / sws) | Order 8 (fi / wsw) |
| formal | Spoken | Written | Spoken | Written |
| | Written | Spoken | Written | Spoken |
| informal | Spoken | Spoken | Written | Written |
| | Written | Written | Spoken | Spoken |

Besides the advantages of narration tasks over structured and controlled experiments (Bardovi-Harlig 2000), this particular methodology taps into participants’ explicit and implicit knowledge, providing data for a variety of phenomena such as RRCs.

5.1. Production task

This exploratory method is consisted of a production task which aims to elicit monolinguals’ and heritage speakers’ repertoires. A 42-second silent video

presenting a fictional, non-severe car accident was shown to every participant. The incident took place in a parking lot, and some passers-by were involved. The task was to retell what happened to different people, with participants imagining that they witnessed what happened. In the formal setting, participants were required to produce a written and an oral report addressing the police, while in the informal one they were required to send a voice and a text message in WhatsApp to a close friend.

5.2. Participants

We recruited two groups of participants: the first consisted of Greek heritage speakers residing in the US, specifically in New York and Chicago, and the second was a control group consisting of monolingually raised subjects who reside in Athens, Greece. Metalinguistic data were also collected in the form of a questionnaire at the end of the production task. Table 2 presents the number of participants recruited in both groups and their mean of chronological age of testing. Moreover, more metalinguistic factors were gathered for the heritage group, namely the age of onset to bilingualism ranging from 0 to 6 years old, meaning that within this group there are both simultaneous and sequential bilinguals. Furthermore, the current input is measured bidirectionally, meaning how often participants speak Greek to different members of their family and friends, and how often each of these participants speaks Greek to family and friends. This was measured in two three-point scales from rarely to daily (0 to 2), computing one score per participant. The self-ratings were calculated out of four questions on listening, reading, writing and comprehension of each language on a scale from very easy to very difficult (1 to 5) for each question. Additionally, the years and the hours of formal bilingual education were calculated for the heritage group and the visits to the country of their heritage on a scale ranging from none to several visits per month (0–4). Finally, in order to profile in more detail, the quality of language input heritage speakers received was documented through their parents' immigration background and by classifying them into generations. For monolingual controls there are no scores for the following factors: age of onset, current input, years and hours of education, parent's generation and visits in the heritage country, as they have been born and raised by parents of only Greek origin in mainland Greece acquiring naturalistically and using only one language and attending Greek schools.

6. Results

This section presents the results of the distribution of *pu* and *o opios* RRCs across registers and modalities in the two groups. As shown in Table 3, monolingual controls produced numerically more *pu* RRCs compared to heritage speakers, but they patterned alike. What we also observe is that both groups preferred *pu* RRCs in formal register, contra Holton et al. (1997). The pattern is not clear concerning

Table 2: Metalinguistic data

| | Heritage speakers in the US | Monolingual controls |
|-----------------------------------|--|--|
| N | 63 (34 females) | 64 (32 females) |
| Chronological Age | 22;9 (min 14 – max 35) SD 7.335 | 21;5 (min 13 – max 35) SD 6.638 |
| Age of onset | 1;41 (min 0 – max 6) SD 1.956 | - |
| Current Input in Gr | 0.789 (min 0.1 – max 1.5) SD .3482 | - |
| Current Input in AE | 1.16 (min 0.5 – max 1.9) SD .3458 | - |
| Self-ratings in Gr | 3.59 (min 1.75 – max 5) SD .9369 | 4.87 (min 3.25 – max 5) SD .3118 |
| Self-ratings in AE | 4.91 (min 4 – max 5) SD .2153 | - |
| Literacy practices in Gr | 1.01 (min 0 – max 2) SD .5252 | 1.54 (min 0.33 - max 2) SD .4614 |
| Literacy practices in AE | 1.81 (min 0.3 – max 2) SD .3601 | - |
| Parent's generation | Both 1 st | 30 prt |
| | One 1 st | 3 prt |
| | One 1 st one 2 nd | 18 prt |
| | One 1 st one American | 2 prt |
| | Both 2 nd | 8 prt |
| | One 2 nd One 2 nd one American | 1 prt |
| Years of education in Gr | 9;13 (min 0 – max 12) SD 3.401 | - |
| Hours of education in Gr | 2166.19 (min 0 – max 3120) SD 890.692 | - |
| Visits to the country of heritage | 1.03 (min 0 – max 2) SD .314 | - |

the modality. In order to further explore our findings, we performed 4 Mann-Whitney non-parametric tests for 2 independent samples for every condition. The tests were performed in the statistical program SPSS v.25. According to the outcome, none of the four conditions appeared to be significant (for formal spoken $U=1744$, $p=.179$, formal written $U=1779$, $p=.241$, informal spoken $U=1945$, $p=.724$, informal written $U=1768$, $p=.210$).

Taking into account the metalinguistic variables, we performed 2-tailed Pearson's correlations for the four conditions in the heritage group. The only condition that had significant interactions, although weak, was the formal written one. The two variables that have a negative correlation with this condition are the years of education in Greek [$r(-.260) = 63$, $p=.040$] and the hours of education in Greek [$r(-.253) = 63$, $p=.045$], meaning that the less years and hours of education in the heritage language the speakers have received, the more *pu* RRCs they produce.

Table 3: Production of *pu* RRCs across registers and modalities in the two groups

| | Heritage Speakers in the US | Monolingual controls |
|------------------|-----------------------------|----------------------|
| Formal spoken | 135 | 123 |
| Formal written | 93 | 129 |
| Informal spoken | 101 | 111 |
| Informal written | 61 | 85 |
| | 390 | 448 |

Focusing on *o opios* RRCs, we observe that monolingual speakers produce quantitatively more clauses in contrast to heritage speakers (see Table 4). Monolingual controls seem to favor the production of this type of clauses in formal register, while the picture for modality is again unclear. We performed four further Mann-Whitney non-parametric tests for the four conditions of this type of RRCs, and the report suggests that the two groups differ significantly with respect to the production of *o opios* RRCs (formal spoken $U=880$, $p=.000$, formal written $U=1105$, $p=.000$, informal spoken $U=1417$, $p=.000$, informal written $U=1487$, $p=.000$). Moreover, there was no significant interaction between the metalinguistic variables of the heritage group and the four conditions.

As RQ3 explores the possibility of cross-linguistic influence of the majority language we calculated the RRCs in their English narrations. Table 5 exhibits the instances found in the two registers. It is clear from the table that *that* RRCs are quantitatively more than *which* and *who* RRCs. What is common in the three types of RRCs is that all forms are preferred in the formal register. Focusing only on *that* RRCs, we can observe that our speakers produce fewer *that* RRCs in comparison to the *pu* RRCs presented in Table 3.

Table 4: Production of *o opios* RRCs across registers and modalities in the two groups

| | Heritage Speakers in the US | Monolingual controls |
|------------------|-----------------------------|----------------------|
| Formal spoken | 3 | 88 |
| Formal written | 3 | 61 |
| Informal spoken | 0 | 39 |
| Informal written | 2 | 23 |
| | 8 | 211 |

Table 5: Production of *that/ which/ who* RRCs across registers in the heritage group

| Register | That | Which | Who |
|----------|------|-------|-----|
| Formal | 89 | 53 | 59 |
| Informal | 53 | 17 | 23 |
| | 142 | 70 | 82 |

Exploring further the heritage speakers' productions of RRCs in the two languages, we juxtaposed their English and Greek narrations, in order to see whether they used the same strategy. The result was that only in 25 examples do they in fact resort to the complementizer strategy, as shown in 3. Compared to the total number of RRCs produced in their AE narrations, the complementizer strategy used in Greek narrations corresponds to roughly one fifth of the total.

- (3) a. *The vehicle* *that* *was in front* (AE)
 b. *To proto amaksi* *pu* *itan brosta* (MG)
 The first car that was in front
 ‘The first car that was in front’

Our attempt to map *who* and *which* RRCs with *o opios* RRCs was fruitless as there were only a few instances of the latter. Rather, 19 *who* and 13 *which* RRCs could be directly juxtaposed with *pu* RRCs, as example 4 shows. Although the stimulus and the setting were exactly the same during the elicitation in both languages, we could find very few matches compared to the number of RRCs produced. This can be explained by the lower proficiency heritage speakers have in the heritage language, as shown in Table 2, confirmed by the number of tokens in the two subcorpora (tokens in version 0.4.0: heritage Greek 18.302, majority English 30.913) (Wiese et al. 2021).

- (4) a. [...] *was a woman who was putting groceries away into her car* (AE)
 b. [...] *itan mia kiria pu evaze ta psonia tis mesa sto amaksi* (MG)
 [...] *there was a lady that was putting the groceries her in the car*
 ‘there was a lady who was putting her groceries in the car’

6.1. Discussion for RQ1, RQ2 and RQ3

With respect to RQ1, the findings show that *pu* RRCs are favoured across groups in the formal communication setting. Our prediction was borne out in the sense that heritage speakers prefer *pu* RRCs over the other type, something that is obvious from their scarce productions of *o opios* RRCs.

Moving on to RQ2, our prediction was not confirmed, meaning that we are unable to support that heritage speakers exhibit register levelling compared to monolinguals. The two unexpected findings concerning RQ2 is that monolingual speakers produce firstly quantitatively more *pu* RRCs in the formal than in the informal register, and, secondly, they produce more *pu* RRCs compared to *o opios* RRCs even in the formal register.

Finally, with respect to RQ3, we cannot observe any transfer effect from AE to Greek. This is based on the fewer instances of *that* RRCs found in the English narrations compared to *pu* RRCs found in the Greek.

7. Conclusion

The present paper aimed to explore the production of RRCs in Greek heritage and monolingual speakers. Regarding *pu* RRCs, the two groups pattern similarly, while they diverge concerning *o opios* RRCs. Beginning with the latter finding, this was expected, as HSs tend to simplify and reduce morphology, a typical example being the case reduction in Greek (Karayiannis et al. 2021). It has been observed that Greek heritage speakers fail to establish agreements within the NP (Alexiadou et al. 2021), thus RRCs introduced with the pronoun *o opios* are avoided. This is further corroborated by the fact that the HSs have no problem using *who* and *which*, that do not exhibit any agreement in their English productions. In addition, HSs lack knowledge of features that are transmitted via formal education and exposure to different communication settings apart from every day informal settings with the core members of their family. Bilingual education in the US is subject to different parishes or organisations, while the official educational system tries to update its curricula to better facilitate the needs of its speakers’ language mosaic. In language contact situations it is common to investigate interference patterns, meaning whether there is interference and how it appears in the heritage language. In the present account, we could not provide any claim about transfer effects from English to Greek RRCs.

What is worth noting in this study is the unexpected and novel pattern observed in monolingual speakers who seem to use *pu* RRCs across registers. This finding should be explored thoroughly with different experimental methods in

future studies because it might point to an internal change in MG. Another perspective concerning those patterns was addressed by Wiese et al. (2022), stating that heritage and monolingual varieties have convergent structures, although only the latter is treated as the norm.

To conclude, we showed that *pu* RRCs are preferred across groups over *o opios* RRCs, and both types are favoured in formal settings. Having compared the English with the Greek RRCs, transfer effects were not observed in the production task. Finally, monolinguals' productions provide evidence of an emerging pattern regarding the use of *pu* RRCs.

Abbreviations

AE American English

EN English

HL heritage languages

HSs Heritage Speakers

if / ssw informal formal/ spoken written spoken written

if / swws informal formal/ spoken written written spoken

if / wsws informal formal/ written spoken written spoken

if / wssw informal formal/ written spoken spoken written

fi / ssw formal informal/ spoken written spoken written

fi / swws formal informal/ spoken written written spoken

fi / wsws formal informal / written spoken written spoken

fi / wssw formal informal / written spoken spoken written

M Masculine

MG Modern Greek

NOM Nominative

RQ Research Question

RRCS Restrictive Relative Clauses

SG Singular

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