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► **To cite this version:**

Metin Bağriaçik, Lieven Danckaert. Raising and matching in Pharasiot Greek relative clauses: a diachronic reconstruction. *Journal of Linguistics*, 2022, 58 (3), pp.495-533. 10.1017/S0022226721000335 . hal-03328119

**HAL Id: hal-03328119**

**<https://hal.science/hal-03328119v1>**

Submitted on 28 Aug 2021

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## Raising and matching in Phrasiot Greek relative clauses: a diachronic reconstruction<sup>1</sup>

This article studies the structure and origin of prenominal and postnominal restrictive relative clauses in Phrasiot Greek. Though both patterns are finite and introduced by the invariant complementizer *tu*, they differ in two important respects. First, corpus data reveal that prenominal relatives are older than their postnominal counterparts. Second, in the present-day language only prenominal relatives involve a matching derivation, whereas postnominal ones behave like Head-raising structures. Turning to diachrony, we suggest that prenominal relatives came into being through morphological fusion of a determiner *t-* with an invariant complementizer *u*. This process entailed a reduction of functional structure in the left periphery of the relative clause, to the effect that the landing site for a raising Head was suppressed, leaving a matching derivation as the only option. Postnominal relatives are analyzed as borrowed from Standard Modern Greek. Our analysis corroborates the idea that both raising and matching derivations for relatives must be acknowledged, sometimes even within a single language.

**Keywords:** relative clause, prenominal, postnominal, raising, matching, Phrasiot Greek

### 1. INTRODUCTION

#### 1.1. *Phrasiot Greek and its speakers*

This paper elucidates the structure and origin of two types of restrictive Headed Relative Clause constructions (hereafter HRCs) which co-exist today in Phrasiot Greek (PhG). PhG is a member of the inner Asia Minor Greek dialect group (iAMG), together with the varieties of Silli, Cappadocia and Pontus (Dawkins 1916: 205–206, 1940: 23, Triandaphyllidis 1993[1938]: 273–295, Janse 1998a,

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[1] Acknowledgments.

Glossing abbreviations follow the Leipzig Glossing Rules. Additional abbreviations are as follows: AOR: aorist, MID: middle voice, PRT: (modal) particle, RA: relative article, RP: relative pronoun.

Karatsareas 2011: 40).<sup>2</sup> At the beginning of the 20th century, PhG was spoken by about 2600 people in six villages around modern-day Kayseri in central Turkey (Sarantidis 1899: 121, Dawkins 1916: 32–35). Between 1923 and 1925, its speakers were relocated to Greece in the context of the population exchange between Greece and Turkey, enacted as a supplementary protocol to the Treaty of Lausanne. Today, PhG is a moribund variety spoken by around 25 people in a number of villages in northern Greece. As of 2020, all its speakers are second generation refugees, their ages ranging between 66 and 84. We have identified 10 male and 12 female speakers who evaluate their speaking and listening abilities in the dialect as fully fluent, which is also reflected in the conversational data elicited from them, as well as in comprehension tests. None of the informants has proficient writing (or reading) skills in the dialect: PhG has no standardized orthography and many speakers only received primary school education in (standard) Modern Greek. All PhG speakers are bilingual in PhG and Modern Greek. To the latter they were exposed from an early age onwards, but crucially not since their infancy: for all our speakers, the language to which they were first exposed at home was PhG. Today, PhG is their weaker language, as is generally the case with heritage languages. No speaker uses PhG on a daily basis; however, especially in the Greek village of Vathylakkos, we have noted that when two or more speakers come together, they often converse in PhG. Among the third-generation refugees there are a few who claim to have good passive knowledge of the dialect; however, they perform rather poorly on both comprehension and production tests.

Given the heritage nature of the dialect it is reasonable – as one reviewer surmised – to expect a multitude of structural differences between present-day

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[2] Certain historical-linguistic criteria, for which see Karatsareas (2011: 40) and Manolessou (2019: 20–21), set iAMG dialects apart from other AMG varieties. The dialect of Mariupol, on the northern shore of the Sea of Azov, which is closely related to Pontic (Symeonidis & Tompaidis 1999: 133–139), is also sometimes included in the iAMG group (e.g. Karatsareas 2011; but see Kisilier 2009: 18–20 for counterarguments). Setting aside the latter, all the remaining speakers of the AMG dialects, except for a small number of speakers of a Pontic sub-variety (Sitaridou 2013), were relocated in Greece after 1923. For the precise locations of where the dialects were spoken in Asia Minor, see Manolessou (2019: 22).

PhG and its ‘baseline’, i.e. the standard against which we compare today’s PhG speakers’ linguistic knowledge (Montrul 2016: 168, Polinsky 2018: 10), which we take to be PhG as documented in the surviving written records from before and shortly after the population exchange (on which, see Section 2). There is indeed a limited number of discrepancies between heritage PhG and the baseline, pertaining to e.g. the shape of the genitive plural definite article, and the use of certain discourse particles and future markers (Bağrıaçık 2018: 63, 95–96, 105 fn. 71). Such rapid restructuring in the speech of a final generation of speakers has been claimed to be typical of moribund languages (Bowerman 2008: 139). These differences notwithstanding, we take our informants to be acrolectal speakers, ‘[...] who produce and understand the language in the manner that makes them closest to the baseline’ (Polinsky 2018: 6).

Unless otherwise mentioned, the data from present-day PhG used in this article are drawn from a spoken corpus recorded between 2013 and 2017 (with data from 11 speakers), supplemented with judgements from 17 PhG speakers interviewed during multiple fieldwork trips between 2013 and 2017. Data were elicited primarily through standard acceptability judgment tasks. To avoid the so-called *yes-bias* (Polinsky 2018: 96), i.e. an informant’s reluctance to reject ungrammatical material, we administered multiple stimuli of the same condition at least four times to the available speakers (over a period of four years), and we supplemented our data with translation tasks (into and from Modern Greek).

With this background in mind, we can now turn to the empirical domain of our research.

### *1.2. Pre- and postnominal tu-relatives in PhG*

PhG restrictive relative clauses (henceforth RCs) are finite and introduced by the morpheme *tu*. In the present-day language, prenominal (1a) and postnominal (1b) RCs co-exist, without there being any obvious semantic or pragmatic difference between the two structures:

- (1) (a) tu íðami si stráta  
 TU see.PST.1PL on.DET.F.ACC.SG road.F.ACC.SG  
**o nomát**  
 DET.M.NOM.SG man.M.NOM.SG
- (b) o nomát tu íðami  
 DET.M.NOM.SG man.M.NOM.SG TU see.PST.1PL  
 si stráta  
 on.DET.F.ACC.SG road.F.ACC.SG  
 ‘the man we saw on the street’

Adopting standard generative terminology, we will refer to the nominal category modified by the RC as the ‘Head’ of the RC (highlighted in boldface throughout the examples). As will be discussed in Section 2, whereas the pattern in (1a) is attested throughout the documented history of the language, postnominal RCs (1b) only became productive after the 1930s.

Prenominal RCs are at least optionally available in all iAMG varieties (Dawkins 1916: 200–201, Anastasiadis 1976: 173 a.o.). It is standardly assumed that this structure came about through long-term contact with Turkish (Dawkins 1916: 201–202, Andriotis 1948: 48, Janse 1998b, 1999, Thomason 2001: 74), a language which exclusively has prenominal RCs.<sup>3</sup> Here we do not wish to take issue with the important role language contact played in causing this pattern to thrive; neither will we make any claims about the historical sources of prenominal RCs in iAMG varieties other than PhG. However, for the particular case of PhG, a pure language-external account of the origins of prenominal RCs does not explain the origin of the complementizer *tu*, which has no corresponding form in any other Modern Greek dialect (and which was not borrowed from Turkish). Furthermore, proponents of the idea that prenominal RCs originated through language contact assume that what changed is only linear constituent order: the innovative prenominal RCs are thought to be derived from their pre-existing postnominal counterparts, as a reflex of a more general development in which

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[3] A second, marked, pattern for HRC formation in Turkish involves finite postnominal RCs introduced by the morpheme *ki*. This pattern has fallen into disuse today (Kornfilt 1997: 60). Some analyses treat *ki*-relatives as paratactic clauses (e.g. Schroeder 2002).

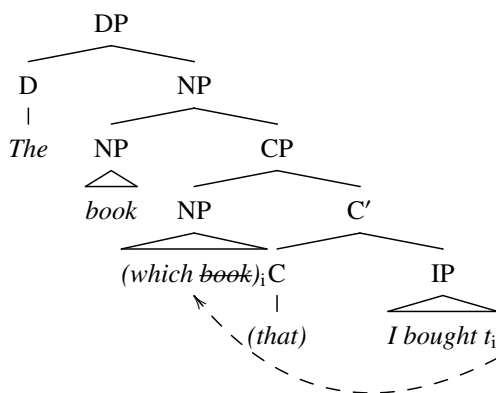
word order in iAMG was aligned with the typical ‘head-final’ syntax of Turkish. However, although this scenario is not *a priori* implausible, it would remain to be determined precisely under which conditions this instance of syntactic borrowing took place. In addition, the idea of word order copying does not explain a number of structural properties of prenominal RCs in PhG, to which we turn now.

### 1.3. Raising and matching

One important observation concerning the two patterns in (1) is that they consistently behave differently with respect to a number of syntactic tests which are standardly used to distinguish ‘matching’ from ‘raising’ RCs. Two simplified structures for matching and raising RCs are given in (2) (cf. Cinque 2015: 2, his (1)–(2)).<sup>4</sup> For the sake of simplicity, we are at this point abstracting away from the linear ordering of the RC and the Head:

(2) (a) MATCHING

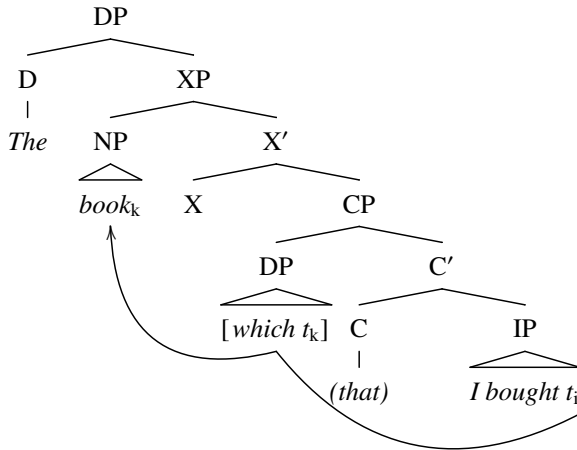
the book [ which<sub>i</sub>/that/∅ I bought t<sub>i</sub> ]



(b) RAISING

the book<sub>k</sub> [ [ which t<sub>k</sub> ]<sub>i</sub>/that/∅ I bought t<sub>i</sub> ]

[4] Many different variants exist of both analyses: for an overview see de Vries (2002: chapter 3 and App. 3). For our purposes nothing hinges on the differences between these analyses.



In a matching derivation (2a), the Head that is interpreted is an NP base-generated outside the relative CP. Inside the RC there is a ‘matching’ internal Head, which optionally raises (as indicated by the dotted arrow), and which is always deleted under identity with the external Head (for various implementations, see Lees 1961, Chomsky 1965, Sauerland 1998). In contrast, in raising derivations (2b) the internal Head is interpreted, but only so after it raises from within the RC to a position contiguous to the external determiner (for early discussion see Brame 1968, Schachter 1973, Vergnaud 1974; for recent analyses see a.o. Kayne 1994, Bianchi 1999, Bhatt 2002, de Vries 2002).

In a series of recent publications, Guglielmo Cinque has proposed a unified analysis of all relativization structures available in Universal Grammar (Cinque 2003, 2008a, 2015, 2016, 2020). This analysis is rooted in the author’s earlier work aimed at providing a syntactic account of a fundamental, and cross-linguistically robust, asymmetry concerning the relative order of nouns and their modifiers (demonstratives, numerals, adjectives): simply put, to the left of a noun, the order of modifiers is unique, while to the right more possibilities exist (Greenberg’s Universal 20). Adopting Kayne’s (1994) antisymmetric framework, which bans all symmetrical mergers of modifiers, to the left as well as to the right of an XP, Cinque suggests that adnominal modifiers are always externally-merged above NP, resulting in a ‘modifier – N’ base order. Postnominal modifiers

are derived by NP-movement to the specifier of agreement projections, whereby NP can optionally pied-pipe some functional superstructure (Cinque 1996, 2005, 2009). Extending this analysis to all RC types observed in natural languages, and taking into account the respective order of RCs and other adnominal modifiers, Cinque concludes that all types of RCs can be analyzed as phrasal modifiers, universally first-merged in the extended projection of a noun.

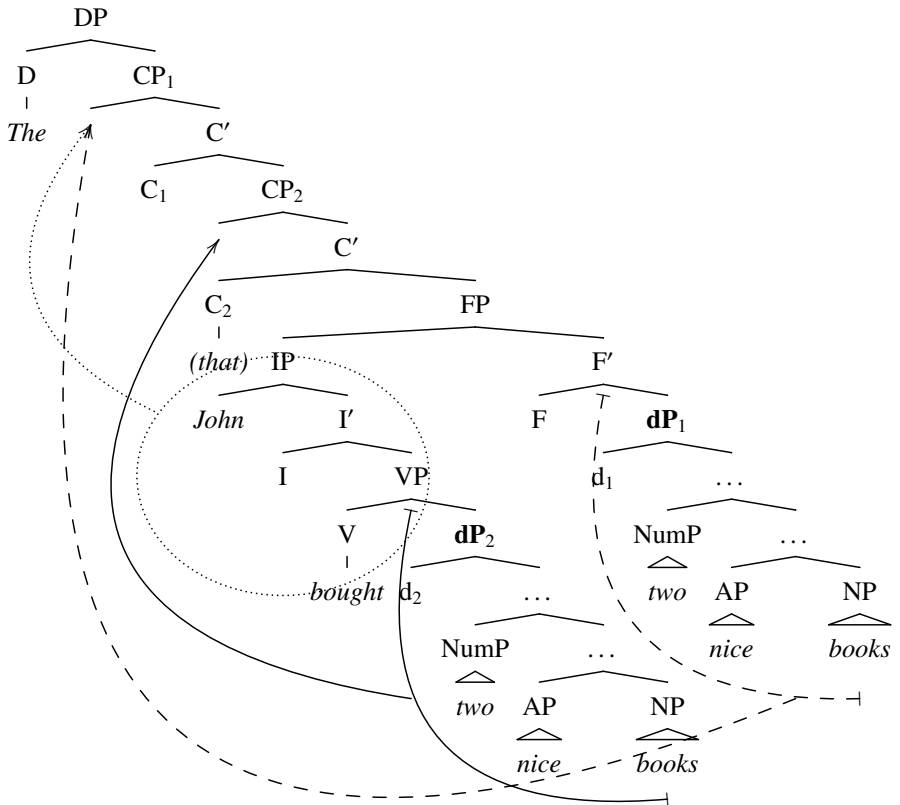
The basic structure for finite, restrictive RCs from which various surface patterns can be derived is given in (3) (from Cinque 2008a: 10, his (16)).<sup>5</sup> For illustrative purposes, English words were added to this structure, forming the HRC *the two nice books that John bought*. According to Cinque, all RCs (including FRCs, see below) are double-Headed: they have both an internal and an external (nominal) Head, the whole structure being projected by the external Head noun, cf. (3). The top node of both the internal and the external Head is taken to be a ‘little dP’, i.e. an extended NP which is not endowed with full functional superstructure. As we will see in Section 3.2, in PhG the d-node is spelled out overtly. Parametric variation (raising vs. matching; prenominal vs. postnominal; externally- vs. internally-Headed) is taken to be a function of (i) whether or not the internal and/or external Head move to the specifier of one of the C-projections in between FP (the functional head hosting the RC proper) and the external determiner (D), and (ii) which of the two Heads undergoes phonological deletion. Consider how exactly this works.

(3)

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[5] Cinque (2015, 2016, 2020) proposes a slightly different structure, in which the C-projections hosting relative complementizers and (optionally) the internal and/or external Head are not directly selected by D, but rather merged on top of the relative IP in SpecFP. See further (Cinque 2020: §3.5) for different merge positions of finite non-infinitival, participial and non-restrictive RCs.





**dP<sub>1</sub>** = external Head

**dP<sub>2</sub>** = internal Head

In the case of postnominal RCs, a raising derivation obtains when only the internal Head moves to SpecCP<sub>2</sub> (cf. the solid arrow in (3)), causing phonological deletion of the external Head under c-command. If, on the other hand, raising of the internal Head is followed by movement of the external Head to SpecCP<sub>1</sub> (cf. the dashed arrow in (3)), it is the latter that deletes the former and ends up being pronounced, yielding a postnominal RC of the matching type. In prenominal RCs, a raising derivation is identical to what we have in the postnominal case (movement of the internal Head to CP<sub>2</sub> and deletion under c-command), modulo the additional movement step of the remnant IP (circled) to CP<sub>1</sub>. In prenominal matching RCs nothing moves at all, and the external Head is spelled out overtly,

eliding the internal Head ‘backward’ in a type of ellipsis which is reminiscent of VP deletion, which can apply both forward and backward, without any c-command requirement by the antecedent (*John might <do this job> but I won’t <do this job>*).<sup>6</sup> The derivation of internally-headed RCs is the converse of the matching derivation of prenominal RCs: the internal head controls the ‘forward’ deletion of the external head.<sup>7</sup> Finally, the syntax of FRCs – both definite and universal ones – is essentially the same as that of HRCs: the former feature two silent Heads (with which *wh*-pronouns are associated if they exist in a given language), namely a phonologically null classifier-like element such as PERSON, AMOUNT, MANNER OF THING.

In this paper, we adopt Cinque’s double-Headed analysis of all types of RCs, which also neatly incorporates the, by now standard, idea that HRCs involve a CP that is dominated by an external determiner (D) (cf. Partee 1975 and much subsequent work).

#### 1.4. Summary and roadmap

As we will discuss at length in Section 3, one crucial observation is that postnominal but not prenominal RCs in PhG display reconstruction effects and island sensitivity, suggesting that the former but not the latter involve syntactic movement, namely Head-raising. We suggest that the etymology of the relativizer *tu* is crucial to understand how prenominal matching RCs came about in the language. Specifically, we analyze *tu* as originally bimorphemic, consisting of a definite determiner *t-* (of category D) and an invariant (relative) complementizer *u* ‘that’ (i.e. a C-element). The morphological fusion of these elements around the 3rd c. CE, we claim, eliminated SpecCP (or any other position between D and C) as a possible landing site for a Head NP. Interpreting this in the light of

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[6] Cinque (2020: §2.1.1) points out that there might indeed be a difference between VP deletion and dP deletion, only the latter of which seems to be obligatory cross-linguistically, excluding those which allow double-Headed RCs, although a representative linguistic survey of VP ellipsis is missing.

[7] This is only one possible derivation of internally-Headed RCs, which do not form a homogeneous class (Hiraiwa 2017: 7, Cinque 2020: §2.3.3-2.3.7.)

the unified approach to RCs initiated in Cinque (2003), we propose that overtly spelling out the external Head turned out to be the prevalent option to form HRCs with *tu* (the only alternative being internally-Headed RCs, which as we will see only constitute a minority pattern). Our account thus captures not only the lack of reconstruction effects and island sensitivity in prenominal RCs, but it also explains the emergence of *tu*, which does not have an analogue in other Modern Greek dialects. In all likelihood, the eventual success of prenominal RCs is to be ascribed to Turkish influence, given that Greek and Turkish co-existed for about ten centuries in Asia Minor, and given that there is ample independent evidence for massive linguistic borrowing from Turkish in various areas of the PhG grammar. As to postnominal RCs, which, judging by their absence in the earliest written records, are a recent innovation, we claim that they emerged due to contact with Modern Greek, to which speakers of PhG have been exposed since, at least, their relocation to Greece in 1923–1925. We suggest that the PhG relativizer *tu* was identified with the Modern Greek invariant complementizer *pu* ‘that’, and that the structure of postnominal RCs of Modern Greek was copied into PhG following this identification. As we will argue, two facts support this claim: first, both Modern Greek and PhG postnominal RCs bear characteristics of Head-raising structures, and second, neither Modern Greek nor PhG allow for constituent fronting inside postnominal RCs.

In sum, our paper sheds light on the synchrony and diachrony of both types of HRCs in PhG, and more generally on the development of relativization strategies in the Hellenic language family. At a theoretical level, it provides evidence for the claim that both raising and matching structures should be assumed for RCs, even within a single language (Sauerland 1998, 2000, Bhatt 2002, Hulsey & Sauerland 2006, Sichel 2014, Deal 2016).

The article is structured as follows. In Section 2 we introduce the basic facts about PhG HRCs, before and after the population exchange, up to today. In Section 3, we apply four tests to differentiate matching and raising to present-day PhG RCs, and conclude that prenominal RCs involve matching, and postnominal

ones raising. We proceed to show how prenominal and postnominal RCs in PhG can be analyzed in Cinque's unified framework. Turning to the diachronic analysis, in Section 4 we first provide an overview of relativization strategies in the history of Greek, focusing in particular on the typology of relativizers and on the linear order of the RC with respect to the Head. In Section 5, we propose that the key to understanding the syntactic behavior of prenominal RCs in PhG resides in the etymology of the relativizer *tu*. In Section 6, we argue that postnominal RCs in PhG were borrowed from Modern Greek. Section 7 concludes.

## 2. RELATIVIZATION IN THE ATTESTED HISTORY OF PHG

The attested history of PhG stretches back to the late 19th century, and today a substantial body of texts is preserved, which allows us to have a good idea about the state of the language before it came into intensive contact with Modern Greek (see Bağrıaçık 2018: 14–17 for a list of these texts). In this section we provide a descriptive overview of relativization strategies in the attested history of PhG, with special attention on constituent order (prenominal vs. postnominal RCs). For reasons to be elaborated on in section 2.1, it is important to make a distinction between restrictive and non-restrictive relatives: in a nutshell, on the assumption that the latter are amenable to an analysis in which the RC is in fact an appositive free relative clause (FRC), which may follow or precede a nominal associate (de Vries 2002: chapter 6, §5.3), we will show that initially only the prenominal RC-pattern could unambiguously express restrictive modification in PhG. In later stages, on the other hand, a restrictive interpretation becomes available with postnominal RCs too.

### 2.1. 1890s–1923: the predominance of prenominal RCs

Dawkins (1916: 201) was the first author to claim that RCs in PhG are prenominal. A systematic survey of surviving PhG texts from before the population exchange of 1923 by and large confirms this, as the overwhelming majority of the attested RCs are indeed prenominal (73 out of 81 tokens, i.e. 90.12%). In all cases, the

morpheme *tu* occurs at the left edge of the RC. Two examples are given in (4), featuring a definite (4a) and an indefinite Head (4b) respectively. The Head can also be animate or inanimate, and it can have any number, gender and case specification (which we cannot illustrate here due to reasons of space).<sup>8</sup>

- (4) (a) Čo istámi s[[<t>u čo ši yéna]  
not stay.1SG at.TU not have.3SG beard.N.NOM.PL  
**to nomáti**].<sup>9</sup>  
DET.M.ACC.SG man.M.ACC.SG  
'I do not stay with the man who does not have beard.'  
Ἰό ἰσταῖμι σοῦ ἴό ἴθει γένα το νομάτη. (Dawkins 1916: 574. 31)
- (b) [...] s értune [tu kóftune čufále] **ḏío**].  
PRT come.3PL TU cut.3PL head.N.NOM.PL two  
'Let (any) two (men) who cut heads come.'  
... σ'έρτουνε τοῦ κόφτουνε δζουφάλε δύο. (Levidis 1892: 384. 11)

The nominal Head in these examples occur in the absolute final position of the complex noun phrase and it always bears the case assigned to it by an element in the matrix clause (as does any determiner accompanying it), even when there is a potential mismatch between the case requirements inside and outside the RC. This suggests that the Head is external to the RC, as indicated by the bracketing.

Prenominal RCs are most often restrictive: of 73 prenominal RCs, 66 are unambiguously restrictive (8) and four are unambiguously non-restrictive (5).

- (5) č' [ačínos [tu ḏíge sa xére],  
and DEM TU give.IPFV.PST.3SG to.DET.N.PL.ACC hand.N.PL.ACC  
**o Júḏas**], káčefke [...]  
DET.M.NOM.SG Judas.M.NOM.SG speak.PFV.PST.3SG  
'...and that Judas, who betrayed, was speaking...'  
τΖ' ἀτΖίνος τοῦ δίγκε σὰ χέρε, ὁ Ἰούδας, κάτΖευκε...

[8] Greek examples are given as they appear in the original source, and followed by a transcription which remains as close as possible to the phonetic facts of the era as described in Horrocks (2010[1997]). English translations are ours, unless they are available in the original source. Data from papyri were retrieved from [papyri.info](http://papyri.info). Other textual sources are listed at the end of this paper.

[9] When the preposition *s* 'in/on/at' precedes the morpheme *tu* (or a definite article with initial [t]), the initial [t] of latter is very often omitted (following [t] > [s] assimilation) (Dawkins 1916: 598, Anastasiadis 1976: 172, II). In (4a) (and in similar contexts), we reconstruct the omitted [t] inside angle brackets.

(de Lagarde 1886: 8. 16)

Not discussed in Dawkins (1916) is a type of restrictive HRC in which the Head does not sit at the right edge of the complex DP, but rather within the RC (6):

- (6) *ίγρεψε [tu ču še to nomáti*  
 see.pst.3sg TU not have.3SG DET.M.ACC.SG man.M.ACC.SG  
*ta* *paráðe*].  
 DET.N.ACC.PL money.N.ACC.PL  
 ‘He saw the man who had not the money.’

Ἦγρεψε τοῦ ἰούσε το νομάτι τα παράδε.

(Dawkins 1916: 530. 24–25)

Examples like (6) could be analyzed as Head-internal RCs not containing any RC-internal ‘gap’ (Cole 1987, Basilico 1996). At least from a quantitative point of view, this pattern is rather marginal: in texts from before 1923, we found only three HRCs (out of 81, i.e. 3.7%) in which the Head is followed by some material that unambiguously belongs to the RC. Remarkably, although the Head occurs within the RC, its case is assigned externally, via some mechanism whose nature is not at this point clear to us.

Among the remaining five non-prenominal RCs (6.17% of all instances), we recognize two patterns: one which features a full nominal Head (three tokens, in two of which the Head is further modified by a demonstrative (7a)), and one in which the Head is apparently a bare demonstrative (two occurrences, (7b)). Crucially, all these tokens, which at first sight qualify as postnominal HRCs, are in fact interpretively non-restrictive.<sup>10</sup>

[10] The one example cited in Dawkins (1916) in which the Head is not modified by a demonstrative, is also non-restrictive. Consider (i) with the piece of discourse immediately preceding it:

- (i) That king [...] wrote a letter saying: ‘I’m sending a youth to come from here.’ [...] And the boy [...] mounted the king’s horse, goes off.

*Píren* *če* [*to* *xartío*, [*tu éyrapse* *o*  
 take.PST.3SG also DET.N.ACC.SG letter.N.ACC.SG TU write.PST.3SG DET.M.NOM.SG  
*vasilós*]].  
 king.M.NOM.SG

‘He took also the letter, which the king had written.’



(9), and when functioning as a subject, the FRC itself triggers either singular (8) or plural (9) agreement on the matrix verb, depending on the number of the understood referent:

- (9) Ípane [tu ínðe so spíti  
 say.PST.3PL TU COP.3PL in.DET.N.ACC.SG house.N.ACC.SG  
 pésu][...] ]  
 inside  
 ‘The people who are in the house said...’

Εἶπανε του εἶνðαι σο σπῑτί πέσου... (Dawkins 1916: 544. 16–17)

We will assume that (8)-(9) are RCs with a silent nominal Head, which triggers agreement on the RC-internal predicate and, in the case of subject FRCs, also on the matrix verb. For expository reasons, however, we will continue to refer to HRCs with a silent Head as FRCs.

Returning to the cases in (7), we propose that both examples involve a FRC, i.e. a HRC with a null Head. Given that in such examples the complex NP containing the *tu*-relative always refers to an established discourse referent, we take this analysis to be interpretively plausible. The type illustrated in (7a) may involve a definite FRC in apposition to a nominal modified by a demonstrative pronoun: (7a) can thus literally be rendered as *those gold pieces, (the ones) which they collected in a bag*, in a structure where the RC non-intersectively modifies a DP whose referent is discourse-given (see de Vries 2002: 218–223, 2006 for an analysis according to which postnominal non-restrictive RCs are FRCs in apposition to an ‘antecedent’).<sup>12</sup> As for the second sub-type (7b), despite their overall abundance, prenominal RCs are never attested with a bare demonstrative Head (neither before nor after the population exchange). From this, we conclude that demonstrative pronouns obligatorily preceded RCs – a word-order restriction that still holds in present-day PhG (Bağrıaçık 2018: 75). A natural analysis of the

[12] Example (i) in footnote 10 can also be analyzed as a FRC in apposition to a definite nominal (*he also took the letter, (the one) which the king had written*). Similarly, prenominal non-restrictive RCs as in (5) can be analyzed as definite FRCs followed by an appositive DP (de Vries 2006: 264–265) (*that one) who betrayed him, Judas*). This would be consistent with the claim that true prenominal non-restrictives do not exist in the languages of the world (de Vries 2006: 264, 266, Citko 2008; but see also Cinque 2008b: 122 fn. 35).



pattern in (7b) then involves a definite FRC, whose null Head is further modified by a demonstrative pronoun. The fact that the demonstrative pronoun may carry any number and gender specification suggests that it does indeed agree with a nominal element, albeit a phonologically covert one. Cases as (7b) would thus be ‘Headed relatives in disguise’, rather than ‘light-headed relatives’ (both in the sense of Citko 2004).

To conclude, there is no unambiguous evidence that before 1923, PhG had postnominal HRCs; rather, the vast majority of HRCs are prenominal, with Head-internal RCs constituting a minority pattern. If real, the existence of the latter in earlier stages of PhG should not come as a surprise, as this pattern is not uncommon in languages which also have prenominal RCs (Cole 1987). Assuming that non-restrictive relatives are FRCs in apposition, along the lines described above, in what follows we will only be concerned with restrictive HRCs.

## 2.2. 1932–today: the gradual rise of postnominal RCs

HRCs in the texts produced after the population exchange are also finite and introduced by the complementizer *tu*. Concerning the first decades after the exchange, Andriotis (1948: 48) and Favis (1948: 185) claim that RCs in PhG are always prenominal. This is by and large confirmed by corpus data from texts dating from *ca.* 1930–1970, but crucially, in this period we also find a fair amount of postnominal RCs which are unambiguously restrictive. The existence of postnominal restrictive RCs was first explicitly commented upon by Anastasiadis (1976: 174 γ’): ‘[o]ccasionally, the [RC head] is placed at the beginning of the RC for emphasis’ (our translation). As the author does not elaborate on what exactly he means by “emphasis” it is difficult to interpret this statement, and this is compounded by the fact that he only gives one example of a postnominal RC (which is moreover quoted out of context), reproduced here in (10).

- (10) [**A nomát** [tu čo tro to  
 INDF man.M.NOM.SG TU not eat.3SG DET.N.ACC.SG  
 málín tu]], a vrethí kanís n  
 wealth.N.ACC.SG he.GEN PRT find.PASS.3SG someone.NOM PRT  
 da fa.  
 3OBJ eat.3SG  
 ‘A man who does not spend his wealth, there will be someone to spend it.’  
 Ά νομάτ’ τοῦ τξό τρω τό μάλιν του, ’ά βρεθῆ κανείς ν’ τά φα̃.  
 Anastasiadis (1976: 174 γ’)

In any event, Anastasiadis (1976) clearly acknowledges the existence of postnominal restrictive HRCs, which is confirmed by a survey of (oral and written) corpus data from after the population exchange.

In the earliest text from after the population exchange, namely the collection of proverbs by Loukopoulos & Loukatos (1951), we see that out of 43 unambiguously restrictive HRCs, 27 are prenominal, 14 are postnominal (cf. (11), and two are internally-Headed (12). Importantly, ten of the postnominal tokens can be dated around 1946–1948. The two internally-Headed tokens date from before 1940.

- (11) [**To fíði,** [tu čo ftáni se ména]] na  
 DET.N.NOM.SG snake.N.NOM.SG TU not molest.3SG to I.ACC PRT  
 jasatiési šile xrónes.  
 live.3SG thousand years  
 ‘May the snake that does not molest me live a thousand years.’  
 Τὸ φίδι, τὸν τξό φτάνει σὲ μένα νὰ γιασατίεσει ὄιλε χρόνες.  
 (Loukopoulos & Loukatos 1951: 46. §241)
- (12) [Tu irízi **to krasí** ksíði]  
 TU turn.3SG DET.N.NOM.SG wine.N.NOMSG vinegar.N.NOM/ACC.SG  
 ínete vinató.  
 become.3SG strong.SG  
 ‘The wine that turns into vinegar becomes strong.’  
 Τοῦ ’υρίζει τὸ κρασι ξίδι ’ίνεται βυνατό.  
 (Loukopoulos & Loukatos 1951: 44. §232)

In texts from between *ca.* 1950–1970, we found no cases of internally-Headed RCs. The majority of instances of unambiguously restrictive RCs are prenominal

(47/52), but restrictive postnominal RCs such as (13) are also attested (viz. five times):

- (13) [...] *aesmó* s[**to** **potámin** [tu  
 holy.water.N.NOM.SG from.DET.N.ACC.SG creek.N.ACC.SG TU  
 vkéni stin eklesían popukátu]].  
 spring.3SG from.F.ACC.SG church.F.ACC.SG below  
 ‘...holy water from the creek that springs from beneath the church.’  
 ... ἅεσμό στὸ ποτάμιν του βκαίνει στήν ἐκκλησίαν πό’ πουκάτου.

(Theodoridis 1950s: 55. 1–2)

Next, in a number of stories recently recorded by Papadopoulos (2011), we find both postnominal and prenominal restrictive RCs, but no internally-Headed RCs. Our synchronic data also confirms that modern-day PhG has both prenominal and postnominal restrictive HRCs. In the spoken corpus of 11 hours collected between 2013 and 2017 (on which, see Bağrıaçık 2018: 12–13), both types of restrictive HRC with a nominal Head seem to be freely available. We found no internally-Headed RCs, and this pattern is also uniformly rejected by our informants.

All the corpus findings reported on the last two sections are summarized in Table 1:

	Prenominal		Postnominal		Head-int		Total
	#	%	#	%	#	%	#
1886–1923	66	95.7	0	0	3	4.3	69
population exchange							
1932–1940	26	81.25	4	12.5	2	6.5	32
1946–1948	1	9.1	10	90.9	0	0	11
1950–1970	47	90.38	5	9.62	0	0	52
2011	3	37.5	5	62.5	0	0	8
2013–2017	13	40.63	19	59.38	0	0	32

Table 1  
Restrictive RCs in the attested history of PhG (up to 2017).

As to the syntax of HRCs in present-day PhG, native speaker judgments and data from the oral corpus reveal that there is no restriction on the nature of

the Head, which can be definite or indefinite, and have any gender and number specification. In addition, the Head bears the case assigned to it by a matrix case assigner: for example, in (14) and (15) the Head receives nominative case, due to the fact that the whole complex NP functions as the subject of the matrix clause. When marked for accusative case (i.e. the case it would be assigned RC-internally), the structures become ungrammatical:

- (14) [[Tu íðami si stráta] **o**  
 TU see.PST.1Pl on.DET.F.ACC.SG road.F.ACC.SG DET.M.NOM.SG  
**nomát** / < \*to **nomáti** >] rótsin  
 man.M.NOM.SG DET.M.ACC.SG man.M.ACC.SG ask.PST.3SG  
 mis to saxáti.  
 we.ACC DET.N.ACC.SG time.N.ACC.SG

- (15) [**O** **nomát** / < \*to **nomáti** >  
 DET.M.NOM.SG man.M.NOM.SG DET.M.ACC.SG man.M.ACC.SG  
 [tu íðami si stráta]] rótsin  
 TU see.PST.1Pl on.DET.F.ACC.SG road.F.ACC.SG ask.PST.3SG  
 mis to saxáti.  
 we.ACC DET.N.ACC.SG time.N.ACC.SG  
 ‘The man we saw on the road asked us the time.’

We also could not detect any semantic or pragmatic difference between prenominal and postnominal RCs. Both are accepted and used, apparently indiscriminately, although speakers unanimously agree that prenominal RCs sound archaic. The two variants can be observed in the speech of the same speaker today, such as (16):

- (16) (a) Porí na íni ačín [[tu lénkini  
 can.3SG PRT COP.3SG DEM TU say.IPFV.PST.3SG  
 o tatá mu] **i**  
 DET.M.NOM.SG father.M.NOM.SG my DET.F.NOM.SG  
**íkóna**].  
 icon.F.NOM.SG  
 ‘It can be that icon that my dad used to talk (about).’

[K. (fem, 87 yrs.), 02.03.2019, 5:13–5.16]

- (b) [**To** **xáxuu** [tu pérkini]],  
 DET.N.NOM.SG share.N.NOM.SG TU take.IPFV.PST.3SG

axšamdán kleftínkan da.  
 in.the.evening steal.IPFV.PST.3PL 3OBJ  
 ‘The share he used to receive, they would steal it in the evening.’

[K. (fem, 87 yrs.), 02.03.2019, 13:50–13.53]

To sum up, genuine postnominal HRCs appeared after the speakers were relocated to Greece, and their frequency has risen considerably over the last 50 years. Let us now turn to the syntax of both types of HRCs.

### 3. THE SYNCHRONIC SYNTAX OF PRE- AND POSTNOMINAL RCs IN PhG

Recall from Section 1.3 that the major difference between raising and matching RCs concerns the status of the Head: only in raising structures does the phonologically overt Head originate inside the relative CP. For this reason, in raising RCs we expect to find ‘connectivity effects’ indicative of an  $\bar{A}$ -dependency. In this section we will apply four tests discriminating between raising and matching RCs to the PhG data. Specifically, these tests involve phrasal idioms, quantifier scope, weak islands and amount relatives.

#### 3.1. RCs in PhG: raising or matching?

##### 3.1.1. Idioms

It is standardly assumed that the object of a verb + object (V + O) idiom chunk is not semantically autonomous, and that the non-literal meaning can only come about in a local configuration. Idioms have thus often been used to provide support for the raising analysis, the logic of the argument being that if the idiomatic reading of a V + O chunk is preserved when the object is relativized, one would have to conclude that the relevant construction involves Head-raising (Schachter 1973: 31–32, attributed to Brame 1968). In (17), for instance, the fact that the idiomatic reading *make headway* can be obtained in the context of a HRC can naturally be accounted for by saying that the Head (*headway*) is interpreted ‘under reconstruction’ in its RC-internal base position as the complement of *make*.

(17) [The headway [(that) we made \_\_\_ ]] was satisfactory.

(Schachter 1973: 31 his (35c))

PhG possesses numerous V+ O idioms:

- (18) (a) Tro pušmáni.  
eat.1SG regret.N.NOM.SG  
'I (have) regret.'
- (b) Éxu ftálmi.  
have.1SG eye.N.NOM.SG  
'I have my eyes (on someone).'

Certain idioms, such as (18b), do not allow O-relativization at all, whereas others do, the important factor being the semantic opacity/degree of lexicalization of a given idiom.<sup>13</sup> The idiom in (18a) does allow for O-relativization, with retention of the idiomatic reading. There is however one important restriction: this state of affairs only holds for postnominal RCs (19a); the same configuration in prenominal contexts results in unacceptability (19b).

- (19) (a) [To pušmáni [tu éfain \_\_\_ ]] xa  
DET.N.NOM.SG regret.N.NOM.SG TU eat.PST.3SG PRT  
ta skotósi.  
3OBJ kill.3SG  
'The regret that he had would kill him.'
- (b) \* [[Tu éfain \_\_\_ ] to pušmáni] xa  
TU eat.PST.3SG DET.N.NOM.SG regret.N.NOM.SG PRT  
ta skotósi.  
3OBJ kill.3SG  
(int.) 'The regret that he had would kill him.'

The fact that reconstruction of the Head is possible in postnominal but not in prenominal RCs suggests that only the former involve raising.

### 3.1.2. Scope $Q > Num$

Further connectivity effects can be observed in RCs featuring two scope-taking expressions. Aoun & Li (2003) show for English that a relativized object NP

[13] Bianchi (1993: 370) distinguishes two types of idioms in Italian based on whether O-relativization (and retention of the idiomatic reading) is available or not. de Vries (2002: 78) calls those V + O sequences that allow relativization collocations.

modified by a numeral can be interpreted within the scope of a universally quantified subject NP inside the RC (see also Bianchi 1999: 45–46):

- (20) I phoned [the two patients [that every doctor will examine \_\_\_ tomorrow]]. ( $\forall > 2$ ;  $2 > \forall$ )

(Aoun & Li 2003: 98 their (7c))

In (20), the Head can take both narrow and wide scope with respect to the quantified subject inside the RC, namely *every doctor*. The wide scope reading ( $2 > \forall$ ) goes with linear order. In the narrow scope reading ( $\forall > 2$ ), relevant for the connectivity effects discussed here, the Head is interpreted in the c-command domain of the quantified subject *every doctor*, yielding a distributive reading with twice as many patients as doctors. The availability of this reading suggests that the Head must have raised from the RC-internal object position.

In PhG, an indefinite direct object with a numeral modifier which is c-commanded by a universally quantified subject NP is always interpreted distributively (21).

- (21) Xer o zaptiás iðin tría kléfti.  
 every DET.M.NOM.SG policeman.M.NOM.SG see.PST.3SG three  
 burglar.M.NOM.PL  
 ‘Every policeman saw three burglars.’

(3 burglars per policeman, i.e.  $\forall > 3$ ;  $*3 > \forall$ )

Interestingly, the distributive reading of an indefinite object is preserved under relativization, but only in postnominal RCs (22a) vs. (22b). This holds true even if the Head ends up being combined with a definite external determiner; note that an additional non-distributive reading also becomes available in (22a).

- (22) (a) Piésam [ta tría tis kléfti  
 catch.PST.1PL AGR.PL three DET.M.ACC.PL burglar.M.ACC.PL  
 [tu iðin xer o zaptiás  
 TU see.PST.3SG every DET.M.NOM.SG policeman.M.NOM.SG  
 \_\_\_ ]].

‘We caught the three burglars that every policeman saw.’









	Postnominal	Prenominal
1. O-relativization in V+ O idioms	YES (19a)	NO (19b)
2. Scope reconstruction (Q > Num)	YES (22a)	NO (22b)
3. Weak island sensitivity	YES (24a)	NO (24b)
4. Amount reading	YES (26a)	NO (26b)

*Table 2*

Differences between pre- and postnominal RCs in PhG.

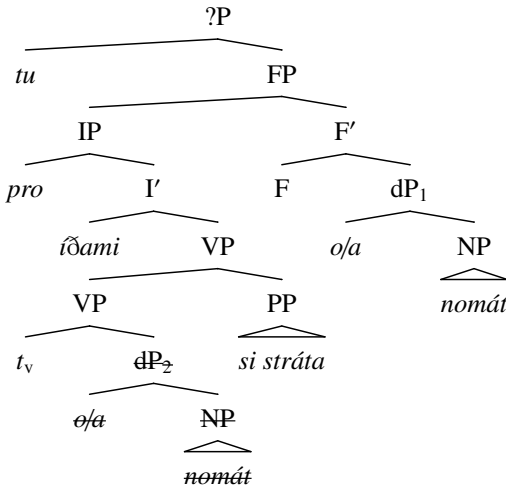
prenominal RCs do not. The latter are therefore better characterized as matching structures.

This conclusion implies that there is not one ‘primary relativization strategy’ (in the sense of Keenan & Comrie 1977) in present-day PhG, and that one type of HRC is not derived from the other via preposing/left dislocating the Head or extraposing the RC. Apart from the structural differences reviewed so far, the lack of semantic/pragmatic differences between the two patterns also confirms this claim.

### *3.2. Towards a structural analysis*

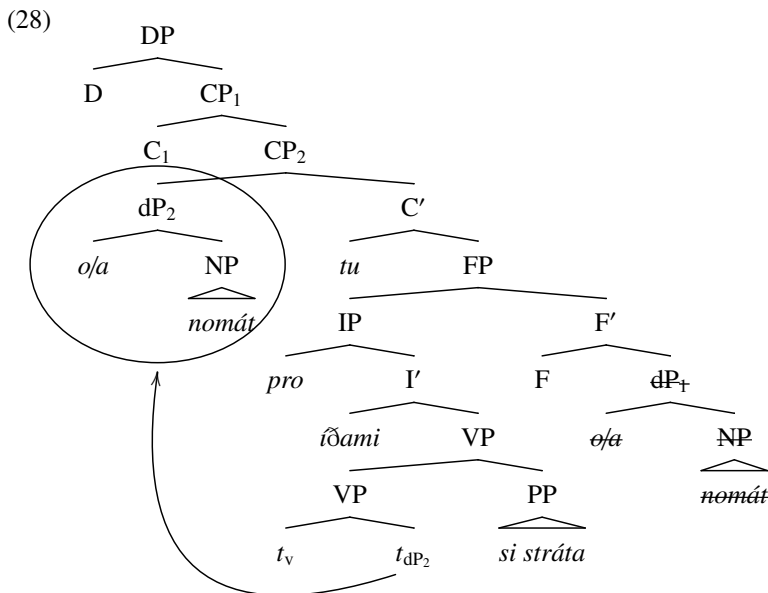
Returning to the syntax of HRCs in PhG, we propose that the derivation of a prenominal RC like (14) is as in (27). In this structure, neither of the Heads evacuates its base position, and the external Head  $dP_1$  triggers backward deletion of the internal Head  $dP_2$ . Since the overtly spelled out Head is the external one, the lack of connectivity and island effects, as well as the word order, are correctly accounted for.

(27)



Two remarks are in order. First, in (27) we are being deliberately vague about the functional superstructure above FP (i.e. the base position of the RC), and by this token also about the position of the relativizer *tu*: these two issues will be addressed in Section 5. Second, we assume that the article accompanying the external Head is the overt spell-out of  $d_1$  (which in a language like English is not lexicalized overtly), and not of an external D-category scoping over the entire complex nominal. Without going into full detail, following Lekakou & Karatsareas (2016) we analyze this low determiner as a semantically vacuous expletive article, lexicalizing a nominal class feature rather than a contentful definiteness head. See also Revithiadou & Spyropoulos (2012: 107) for related discussion concerning a variety of Pontic Greek.

Turning to postnominal RCs (15), we propose that these are derived as in (28). This structure involves movement of the internal Head to SpecCP<sub>2</sub>, from where it deletes the external Head under c-command. Given that the overt Head has undergone  $\bar{A}$ -movement, reconstruction effects and weak island sensitivity are both correctly predicted to be available.



Having completed our synchronic analysis, we now turn to the origins of prenominal and postnominal RCs in PhG. Our three main *explananda* will be (i) the difference qua constituent order, (ii) the different derivations underlying the two patterns (matching vs. raising), and (iii) the morphological shape (i.e. the etymology) of the relativizer *tu*. To lay the groundwork, we first give a brief overview of relativizers and relativization strategies in the history of Greek, with special reference to the period from post-Classical Greek onwards.

#### 4. A BRIEF OVERVIEW OF RELATIVIZATION IN THE HISTORY OF GREEK

In the history of Greek, many different relativization strategies have been available. Here we will only discuss those structures that are most relevant for diachronic reconstruction coming up in Section 5. For more detailed discussion, we refer to Probert (2015) (on Archaic Greek), Jannaris (1987[1897]: 352–355, 468–471) and van Emde Boas et al. (2019: 563–579) (on Classical Greek), Mayser (1934: 98–113), Bakker (1974), Kriki (2013), Bentein & Bağrıaçık (2018) (on post-Classical Greek), Kirk (2012: 77–224) (on New Testament Greek), and to Browning (1983: 66–67), Chila-Markopoulou (1990/1991), Liosis & Kriki

(2014), and Holton et al. (2019: 1091–1164, 1983–1992) (on Medieval Greek). For general diachronic overviews, see Nicholas (1998b) and Manolessou (2004).

Leaving aside internally-Headed RCs (which are not directly relevant for our discussion of PhG), in the following two sections we introduce the most important types of postnominal and prenominal RCs that have been available in the history of Greek. In both types, the relationship between the Head and the RC-internal gap is either mediated by an agreeing relative pronoun or article, or by an invariant relativizer. We first discuss postnominal relatives.

#### 4.1. Postnominal RCs

##### 4.1.1. Agreeing relativizers

The most common relativization strategy in Archaic, Classical and Early Medieval Greek involves postnominal RCs introduced by a clause-initial relative pronoun (see Table 3). These pronouns agree in number and gender with the Head, and is typically case-marked inside the RC. Two examples with relative pronouns are given in (29).

	Singular			Plural			Dual
	M	F	N	M	F	N	
NOM	hós	hé:	hó	hoí	haí	há	hó:
ACC	hón	hé:n	hó	hoús	hás	há	hó:
GEN	hoû	hê:s	hoû	hô:n	hô:n	hô:n	hoîn
DAT	hô:i	hê:i	hô:i	hoîs	haîs	hoîs	hoîn

Table 3  
Ancient Greek relative pronouns.

- (29) (a) enétyk<sup>h</sup>ón soi perì [ tês ónu  
 appeal.PST.1SG you.DAT about DET.F.GEN.SG she-ass.F.GEN.SG  
 mu [hên élaben Nikías]].  
 my RP.F.ACC.SG take.PFV.3SG Nikias.M.NOM.SG  
 ‘I made a petition to you about my she-ass which Nikias took.’

ἐνήτυχ[όν] σοι περὶ τῆς ὄνου μου ἣν ἔλαβεν Νικί[ας].

(*p.mich*, 1.29. 1–2 (256 BCE))



‘The sea (that) you brought to me...’

Τὴν θάλασσαν τὴν μὲ ἔφερες... (Prodr., 1.58, (12th c. CE))

Outside the Attic dialect relative articles are attested only sporadically in Ancient and Classical Greek (Manolessou 2004: 6), but they are more common in papyri from the post-Classical period. They are also frequently found in Early Medieval Greek chronicles and hagiographical texts, and they are the most frequently used device to introduce RCs in Late Medieval Greek (Browning 1983: 62, Chila-Markopoulou 1990/1991: 32). They start to become rarer from the 16th c. onwards (Holton et al. 2019: 1097). Nominative/accusative neuter singular and plural forms of the relative articles are preserved as fossilized relativizers in certain iAMG varieties. In (31) we illustrate forms deriving from *tó* and *tá* from the present-day Cappadocian variety of Misti, where through application of standard phonological processes they appear as *du* (sg.) and *da* (pl.):

- (31) (a) [[*du* γόrais] **du** **pasturmás**]  
 RA.SG buy.PST.2SG DET.N.NOM.SG pastrami.N.NOM.SG  
 ‘the pastrami that you bought’
- (b) [[*da* tírpsin du fšax]  
 RA.PL pierce.PST.3SG DET.N.NOM.SG child.N.NOM.SG  
**da** **yabáxa**]  
 DET.N.NOM.PL pumpkin.N.NOM.PL  
 ‘the pumpkins that the child pierced’

(Cappadocian Greek, Misti variety; T. Papanikolaou, p.c.)

#### 4.1.2. Invariant complementizers

Around the 5th c. CE a new relativization strategy emerged, involving the indeclinable relativizer (*ó*)*pu*, which derives from the locative relative pronoun (*h*)*ópu* ‘where’. It becomes very frequent as a generic relativizer after the 12th c. CE (Nicholas 1998b: 200–211) (32a) and survives as the most common relativizer in Standard Modern Greek (32b) and in various non-standard varieties (Nicholas 1998b: 50–53, 506–536 App. B)



- (32) (a) [...] *lavóntes* ce [**ton** **aðelfón**  
 bring.PTCP.AOR.PL and DET.M.ACC.SG brother.M.ACC.SG  
 [*ópu íce* *proz atón din*  
 PU have.IPFV.3SG towards he.ACC DET.F.ACC.SG  
*lípin*] [...] ]  
 pain.F.ACC.SG  
 ‘... bringing the brother who had distressed him. ...’  
 ... λαβόντες και τὸν ἀδελφὸν ὅπου εἶχε πρὸς αὐτὸν τὴν λύπην...  
 (*Apophth.*, 65:300B,β’, 28–29 (6th c. CE))
- (b) [**O** **καθιγίτης** [*pu mas ékane*  
 DET.M.NOM.SG teacher.M.NOM.SG PU we.ACC do.PST.2SG  
*istoría*] [...] ]  
 history.F.ACC.SG  
 ‘The teacher who taught us history ...’  
 Ο καθηγητής που μας έκανε ιστορία...  
 (Modern Greek, cited in Holton et al. 2012[1997]: 532 their (1a))

Another indeclinable relativizer is *u*, which derives from the masculine/neuter genitive singular of the relative pronoun (*hoû*, cf. Table 3). It often functions as a locative relativizer (33a) (though this use becomes rarer after New Testament Greek, Nicholas 1998b: 201), and after prepositions which canonically take genitive complements such as *prin* ‘before’, *éos* ‘until’, *apó* ‘since’, *ek* ‘from’ and *méxri* ‘until’ (33b), especially in post-Classical Greek (Kriki 2013: 209–235, Bentein & Bağrıaçık 2018). Importantly, there is some evidence that *u* can also appear as a generic relativizer in contexts where it has apparently lost the semantics of a genitive or locative, especially in Medieval Greek (33c).<sup>15</sup>

- (33) (a) [...] *elálešan* en [**te** **póli** [*u*  
 speak.AOR.3PL in DET.F.DAT.SG town.F.DAT.SG U  
*o prop<sup>h</sup>etes o*  
 DET.M.NOM.SG prophet.M.NOM.SG DET.M.NOM.SG  
*presbýtes katóki en a<sup>w</sup>te*]].  
 old.M.NOM.SG settle.IPFV.3SG in it.F.DAT.SG  
 ‘... they spoke in the town wherein the old prophet lived.’

[15] Besides HRCs and adverbial clauses, *u* could also introduce argumental FRCs (Kriki 2013: 211).

... ἐλάλησαν ἐν τῇ πόλει, οὗ ὁ προφήτης ὁ πρεσβύτερος κατόκει ἐν αὐτῇ. (LXX, Reigns III, 13.25 (2nd c. BCE–1st c. CE))

- (b) [...] prin [u is ta áno méri  
before U in DET.N.ACC.PL upper side.N.ACC.PL  
apéithi].  
come.AOR.SBJV.3SG  
'... before he goes up the country.'  
πρὶν οὗ εἰς τὰ ἄνω μέρη ἀπέλθῃ. (sb, 3.6262. 19–20 (3rd c. CE))

- (c) [...] eklironómisén se [akrivá  
bequeath.PST.3SG you.ACC.SG expensive.N.ACC.PL  
**práymata** [u u fthíronde]].  
thing.N.ACC.PL U not wear down.PASS.3PL  
'... he bequeathed you expensive things which do not become worn  
out.'  
... 'eklīrōnōmisen se 'ekrivā prāgmātā 'ū 'u-fthūnde.  
(H. Porte, 31b. 2c–3c (15th. c. CE), cited in Liosis & Kriki 2013: 264  
their (35))

*U* does not survive as a generic relativizer in any Modern Greek dialect today; however, in Pontic Greek it is preserved as a suffix in the relativizer *úts-u* (< *ótis* + *u* 'whoever'), where it functions as a reinforcer (Liosis & Kriki 2013: 254, 261). Elsewhere, it survives in PhG in the (lexicalized) adverbial conjunction *samú* '(the moment) when', which probably goes back to a combination of *ísame* 'until' and *u*. Alternatively, as a reviewer suggests, it may be a combination of *sáma* 'when' (claimed to be attested in PhG by Karolidis (1885: 128), although we did not encounter the form in our corpora) and *u*. In Standard Modern Greek, it appears in (archaicizing) lexicalized conjunctions like *afú* 'after, since' (< *apó* 'since + *u*) and *eksú* (*ke*) 'hence' (< *ek* 'from' + *u*).

#### 4.2. Prenominal RCs

The range of possible relativizers is essentially the same in prenominal as in postnominal RCs. Below we give examples of prenominal RCs with a relative

pronoun (34) and a relative article (35).<sup>16</sup>

- (34) ek γαρ [[*on* έπεμψας] **drak<sup>h</sup>món**] [...]   
 from PRT RP.F.GEN.PL send.AOR.2SG drachma.F.GEN.PL   
 ‘From the drachmae that you sent...’   
 [ἐ]κ γὰρ ὧν ἔπεμψας δραχμῶν... (p.sarap., 80 ll. 18–19 (2nd c. CE))
- (35) [[*tus* γαρ έπεμψάς my] **tris statíras**] pálin   
 RA.M.ACC.PL PRT send.AOR.2SG I.DAT three stater.M.ACC.PL again   
 sy ðiepepsámin.   
 you.DAT.SG send off.AOR.1SG   
 ‘I send you the three staters which you have sent me.’   
 τοὺς γὰρ ἔπεμψάς μοι τρεῖς στατῆρας πάλιν σοι διεπεμψάμην.   
 (p. oxy., 14, 1765 ll. 10–13 (3rd c. CE))

Prenominal RCs have been analyzed as internally-Headed RCs (Kriki 2013, Fauconnier 2014, Probert 2015). However, it is not clear whether this analysis is justified for examples like (34)–(35), for which a Head-external parse is indeed plausible, given that the Head canonically receives case from a case assigner in the matrix clause, not from a source within the RC. For further discussion of Head-external prenominal structures in post-Classical Greek, see (Bentein & Bağrıaçık 2018). We now turn to the genesis of the PhG relative complementizer *tu*.

## 5. THE ORIGINS OF PRENOMINAL RCs IN PHG

### 5.1. Decomposing *tu* as ‘D + C’

Concerning the etymology of PhG *tu*, the standard view is that it is a fossilized form of the masculine/neuter singular form of the relative article (Favis 1948: 191, Anastasiadis 1976: 169, Nicholas 1998b: 295). However, as noted in Liosis & Kriki (2013: 264), there are certain problems with this analysis. For one thing, there is no [o] > [u] raising in monomorphemic words in PhG, making it phonologically unlikely that *tu* is related to *to*. In addition, *tu* is used consistently

[16] (34) additionally exhibits case attraction, i.e. the phenomenon whereby a declinable relativizer bears the same case as the Head (on case attraction in various stages of the Greek language, see Probert (2015: 167–198), Rijksbaron (1986: 238–241) and Bentein & Bağrıaçık (2018)).

for both singular and plural Heads in PhG: in this respect, it contrasts with many other iAMG sub-varieties where (remnants of) both singular and plural relative articles are preserved (see Janse to appear: §7.4.6, Oeconomides 1958: 243 and Costakis 1968: 75 for the dialects of Cappadocia, Pontus (Ano Amisos variety) and Silli respectively).

As an alternative, we build our analysis on the idea that ‘*tu* derives from the generic complementizer *u* with the analogical addition of *t*’, attributed by Liosis & Kriki (2013: 264) to Christos Tzitzilis.<sup>17</sup> We explore the hypothesis that the oldest instantiations of *tu* are composed of the *t*- segment of the definite article (i.e., a form of the article that starts with a /t/ and whose final vowel is elided), and the generic complementizer *u*. We believe this alternative is potentially more explanatory than an analogy-based account, which so far has not received any independent support.

Concretely, we propose that *tu* came into being through reanalysis of a linear string in which a determiner built on a *t*-stem (with elision of the final vowel) and the generic relativizer *u* are adjacent, rather than through analogy. The abstract schema of the input structure for the proposed reanalysis is as in (36a). (36b) is the concrete realization of this pattern, which we assume gave rise to the emergence of *tu*.

- (36) (a) [DP DET [CP C ]]  
 (b) [DP *t*(V) [CP *u* ... ]]

There are two environments in which the exponent of an external D position and a relativizer inside the RC can be string-adjacent, namely prenominal RCs with a leftward definite determiner (definite article), and light-Headed relatives

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[17] Nicholas (1998b: 295 fn. 40) considers yet another possibility: ‘[...] *tu* may have derived [...] from the genitive singular neuter definite article *toû*, which was in use in [post-Classical, Medieval] Greek as a complementizer preceding the infinitive (e.g. *et<sup>h</sup>élo: toû et<sup>h</sup>ên* ‘I want of.the to.come = I want to come’) (reference omitted).’ On infinitives preceded by *toû*, see also Joseph (1983: 49). According to Nicholas, this account requires that ‘[...] *tu* should have developed independently in [PhG] from the rest of [inner Asia Minor] Greek.’ We agree with the author and consider it unlikely that the use of the infinitival (and thus in a sense nominal) complementizer *tu* was extended to (also) serve the very different purpose of introducing RCs.

(i.e. RCs headed by a demonstrative (or a bare quantifier, not relevant here), cf. Citko 2004):

- (37) (a) [DP DET [CP C ] Head ]  
 (b) [DP DEM(/Q) [CP C ... ]]

Although prenominal RCs without a determiner and ‘bare’ FRCs are the norm, the two structures in (37) have been available since the Homeric period as a minority pattern.<sup>18</sup>

In Archaic Greek the element that later becomes the definite article clearly retains (some of) its original demonstrative force (Probert 2015: 137). (38) is an example from Homer where the relevant D-category is followed by a relative pronoun:

- (38) [...] εἰὲ [τὸν [ὃς Σκύρωι μοι ἐνὶ  
 or DEM.M.ACC.SG RP.M.NOM.SG Skyros.F.SG.DAT I.DAT in  
 τρέφῃται] **φίλος** **huiós**] [...]  
 raise.MID.PRS.3SG dear.M.NOM.SG son.M.NOM.SG  
 ‘...or that dear son of mine who is being raised on Skyros...’  
 ... ἦὲ τὸν ὃς Σκύρω μοι ἐνὶ τρέφεται φίλος υἱός...

(Il. 19.326 (8th c. BCE), cited in Probert 2015: 137 her (6.27))

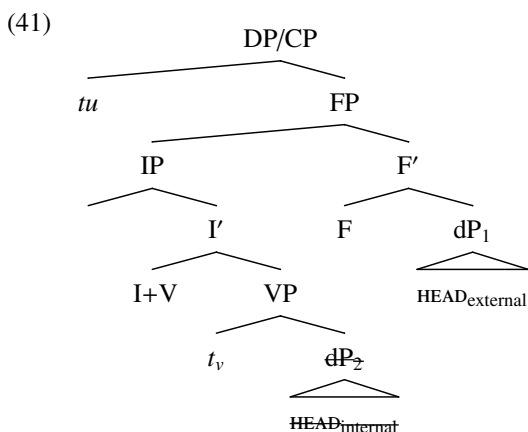
The same ‘D + relative C’ pattern is also attested in Classical (39a) and post-Classical (39b) periods, when the definite article had lost all its demonstrative semantics to become a pure marker of definiteness (see Anagnostopoulos 1922: 188 and Bentein & Bağrıaçık 2018 for further examples).

- (39) (a) [...] [tê:i [hê:i p<sup>h</sup>ëis sÿ]  
 DET.F.DAT.SG RP.F.DAT.SG say.PRS.2SG you.SG.NOM  
**skle:róte:ti**  
 skle:róte:s  
 ‘...in the (word) *sklerótes* (‘hardness’) that you mention...’  
 ... τῆ ἢ φῆς σὺ σκληρότητι... (Crat., 435A (4th c. BCE))

[18] Crucially, despite the absence of a definite article, the Head of these prenominal RCs always receives a definite interpretation (Kriki 2013: 222–223, Fauconnier 2014).



positions of the overt Head in HRCs: the specifier positions associated with the C-positions in between the external determiner and the head hosting  $u$ , which could otherwise host the displaced internal or external Head, or a remnant IP were suppressed (41). Instead, the only option to form HRCs with the newly formed relativizer  $tu$  involves spell-out of the external Head  $dP_1$  in its base position, with backward deletion of the internal Head  $dP_2$ .<sup>19</sup> This gives rise to an externally Headed prenominal RC of the matching type, in which the bimorphemic lexical item  $tu$  heads a projection which syncretically encodes both a C- and a D-feature.<sup>20</sup>



The earliest clear examples in which the relativizer  $tu$  appears as a single word that we could find are given in (42)–(43), both from the 3th c. CE. (42) is a FRC and (43) is a prenominal RC. As the bracketing indicates, the structure we assume for (43) is exactly the one detailed in (41):<sup>21</sup>

[19] Another option is the spell-out of the internal Head  $dP_2$ , with forward deletion of the external Head  $dP_1$ . This process could be at work in the rare cases of internally-Headed RCs observed in texts before and shortly after 1923 (see Section 2.1).

[20] The claim that two functional heads can be spelled out syncretically is reminiscent of Rizzi's (1997: 312) proposal that the heads Force and Fin form one complex head (not formed through head movement) in the absence of any left-peripheral XP intervening between the two. Crucially, in our case syncretization is enforced through the feature composition of  $tu$ , without it being possible to break up the relevant unit by projecting additional structure. On the alternation between syncretic and 'scattered' spell-out of functional categories, see also Giorgi & Pianesi (1997).

[21] Recall from Section 1.3 that the only difference between FRCs and HRCs is that the former

- (42) [...] my enetílato [tu sy díló] [...]
   
I.DAT assign.AOR.3SG TU you.DAT.SG disclose.PRS.1SG
   
‘... He assigned me (everything/the things) which I disclose to you...’
   
... μοι ἐνετείλατο τοῦ σοι δηλῶ... (p.louvre 1.67. 11 (3rd c. cE))
- (43) [...] eán andipémpsis my [[tu písás my]
   
if send.back.SBJV.2SG I.DAT TU make.AOR.2SG I.DAT
   
**οθονίδια**].
   
linen cloth.N.ACC.PL
   
‘... if you send back to me the linen clothes which you made for me.’
   
... ἐὰν ἄν/τιπέμψῃς μοι τουποίη[σάς] μοι ὀθονίδια.
   
(p oxy 20, 2273. 16 (3rd c. cE), cited in Kriki 2013: 293 her (16))

Crucially, we have encountered no early (dating from before the 7th c. cE) examples of postnominal RCs with *tu*, in which *tu* is not a genitive singular of the masculine/neuter relative article, neither in the existing literature (see e.g. Kriki 2013: 291–310, Holton et al. 2019: 1097–1105) nor in our own additional corpus searches.<sup>22</sup> This absence can naturally be accounted for given

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feature two silent Heads, (viz. classifier-like elements such as PERSON/PEOPLE or THING(S)). These are not expected to block fusion of *t-* and *u* when intervening between these two elements. A potential problem with our account for the emergence of *tu* is that FRCs are commonly analyzed as involving maximalizing semantics, and thus they are claimed to be derived through Head-raising (Grosu & Landman 1998, Caponigro 2003). Since the suppression of SpecCP in our account entails that Head-raising becomes unavailable, it would not be possible to derive the inherently maximalizing nature of FRCs. However, FRCs with *tu* in PhG do not qualify as *bona fide* maximalizing structures, given that they can receive an existential interpretation, namely when complementing verbs with existential import (i). Existential FRCs (on which see Caponigro 2003 and Cinque 2020: §2.5.5) are obviously non-maximalizing. Structures like (i) differ from FRCs involving a relative pronoun, such as *óti* ‘what(ever)’, which are inherently maximalizing and thus unable to function as existential FRCs (ii):

- (i) čo íxa [tu na ipó].
   
not have.PST.1SG TU PRT say.1SG
   
‘I did not have anything to say.’
- (ii) \*čo íxa [óti na ipó].
   
not have.PST.1SG RP.ACC PRT say.1SG
   
int.: ‘I did not have anything to say.’

[22] The following example may be one of the first attestations of the relevant pattern:

- (i) [...] ítisa [...] píise [to ospítin [tu
   
request.AOR.1SG make.AOR.INF DET.N.ACC.SG house.N.ACC.SG TU
   
emisθóso] [...]
   
rent.FUT.1SG
   
‘... I requested ... that I build the house which I will rent out...’
   
... ἤτησα ... ποιῆσε τὸ ὄ[σ]τι[τι]ν σοῦ ἐμισθώσω...



the scenario just outlined, but remains puzzling if we assume that *tu* was originally a (monomorphemic) relative article, as suggested by Anastasiadis (1976) and Nicholas (1998b): we do not see why no early postnominal RC with *tu* should survive, not in the least because postnominal RCs with relative articles abound in the history of Greek (see a.o. Liosis & Kriki 2014).

On the basis of the hypothesized structure (41), exemplified in (43), we can make one important prediction concerning the structure of (early) prenominal RCs with *tu*, namely that the Head should always be interpreted as definite (by virtue of *t*-’s D-feature), despite it not appearing with a definite article (which would compete with *tu* for the same structural position). This is indeed what is canonically the case with prenominal RCs in historical Greek (see footnote 18).<sup>23</sup> However, as stated in sections 2.1 and 2.2, in PhG the Head of a prenominal RC must be accompanied by what is traditionally called a definite determiner, which we earlier suggested are expletives rather than genuine definiteness markers (cf. Section 3.2). Alternatively, it can be accompanied by an indefinite determiner. Two relevant examples are given in (44).

- (44) (a) [[*Tu* *íðami*            *si*                            *stráta*]  
           TU see.PST.1PL on.DET.F.ACC.SG road.F.ACC.SG  
**o**                            **nomát**]...  
           DET.M.NOM.SG man.M.NOM.SG  
           ‘The man we saw on the road...’
- (b) [[*Tu* *íðami*            *si*                            *stráta*]                            **a**  
           TU see.PST.1PL on.DET.F.ACC.SG road.F.ACC.SG INDF  
**nomát**]...  
           man.M.NOM.SG  
           ‘A man we saw on the road...’

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(*p.bas* 19. 2–4 (6th–7th c. CE), cited in Nicholas 1998b: 203 his (31c))

According to Kapsomenakis (1938: 99 fn. 2), reading  $\sigma\upsilon$  [su] as the second singular genitive pronoun ‘your’ does not make sense in this papyrus. Based on this, Nicholas (1998b: 203) claims that  $\sigma\upsilon\upsilon$  should be read as  $\tau\upsilon\upsilon$  [tu], yielding a postnominal HRC: (i) appears much later than (43), and as we will show below, there is nothing that precludes postnominal RCs with *tu* once the amalgam *tu* is treated as a monomorphemic complementizer, quite on the contrary. See also Trinchera (1865: 118–119 XC), where a number of postnominal RCs with *tu* appear in a text (produced in Southern Italy) from the 12th c. CE.

[23] The definite reading of the FRC in (e41) also follows from this argument.

We would like to suggest that the lack of a definiteness restriction on the Head emerged in PhG due to the fact that the original [+definite] feature associated with the *t*- component of *tu* was lost over time. In other words, *tu* was further reanalyzed as a monomorphemic exponent of C, leaving the external D-position available to be occupied by any type of non-overt determiner (definite or otherwise).

As to the conditions under which reanalysis took place, two factors may have contributed to this development. First, note that the semantic import of the definite determiner in HRCs and light-headed RCs such as (38)–(40) is not immediately clear, and in a sense superfluous (given that any NP with a prenominal RC was interpreted as definite anyway), especially once the determiner had lost its demonstrative force. A second factor is the relative scarcity of the ‘D + relative C’ pattern: as a result of this the relevant string may have been difficult for language learners to parse correctly, and they may have been prone to equate it to the more frequent determinerless prenominal RC pattern, at least in those contexts where the (morpho)phonological properties of the determiner (starting with a /t/ and ending with a vowel that can be elided) and the relativizer (which must start with a vowel) allow for a morphological merger to take place.

To conclude this section, note that the above analysis goes against the standard assumption that prenominal RCs in PhG (and other AMG varieties) emerged only due to long-lasting contact with Turkish, a language in which the primary relativization strategy is the prenominal one (Dawkins 1916: 201–203, Andriotis 1948: 48, Janse 1998b, 1999, Thomason 2001: 74).<sup>24</sup> The simplest interpretation of this line of analysis would entail that prenominal RCs developed from the pre-existing postnominal pattern through word order borrowing from Turkish. Importantly, however, given this scenario the origin and nature of *tu* remain unexplained. Instead, we take it that Turkish influence cannot be considered

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[24] Favis (1948: 185) and Anastasiadis (1976: 174–175) also claim that the emergence of prenominal RCs should not solely be attributed to Turkish influence; however, these authors also do not explain the origins of *tu*.

the sole trigger for the emergence of prenominal RCs – a conclusion reached independently by Liosis & Kriki (2013: 265). This is of course not to say that we want to eliminate the role of Turkish influence on PhG HRCs altogether: we do believe that contact with Turkish ‘exacerbate[d]/reinforce[d an] existing tendency’ (*à la* Sitaridou 2014: 52) – namely the use of prenominal RCs.

#### 6. POSTNOMINAL RCs: STRUCTURE BORROWING FROM MODERN GREEK

To conclude our diachronic analysis, in this section we propose that PhG postnominal RCs were modeled on Modern Greek postnominal RCs, by identifying *tu* with the Modern Greek complementizer *pu*, the relativizer *par excellence* in this language. As the earliest attested examples of unambiguously postnominal *tu*-relatives in PhG are observed after the relocation of PhG speakers to Greece, this claim seems to have some initial plausibility. The growing number of postnominal RCs among today’s PhG speakers can also be understood if we take into consideration that they are only heritage speakers of PhG, and that the language they mostly use in daily life is Modern Greek. Crucially, we should also note that the overall Modern Greek influence on PhG must have started before the population exchange, through the introduction of elementary education in the region of Pharasa (Dawkins 1916: 33, Papadopoulos 2006: 178–179); nevertheless, contact with Modern Greek became certainly much more intensive after 1923.

Recall that Modern Greek restrictive RCs involving the *bona fide* complementizer *pu* are postnominal (32b). HRCs with *pu* (which do not involve resumption, on which see Kotzoglou & Varlokosta 2005) have standardly been analyzed as raising structures (Alexiadou & Varlokosta 1996, Alexiadou 1998). Hence, our claim that PhG postnominal RCs have been modeled on Modern Greek HRCs also provides a direct explanation for why postnominal RCs in PhG have a raising derivation (cf. Section 3).

There is one additional piece of evidence in support of our claim that postnominal RCs in PhG and Modern Greek are structurally highly similar. In

prenominal RCs in PhG, it is possible for constituents to be fronted from within the RC to a position before *tu* (Anastasiadis 1976: 252 4.α'). For example, in (45) the PP *se ména* 'to me' appears to the left of *tu*:

- (45) [Se ména [[*tu* čo ftáni] **to** **isáni**]]  
 to I.ACC TU not molest.3SG DET.N.NOM.SG person.N.NOM.SG  
 na sósi puá xrónes  
 PRT live.3SG many year.F.ACC(?).PL  
 'May the person who does not molest me live many years.'

Σὲ μένα τοῦ τζο φτάνει τὸ ἰσάνι, νὰ σώσει πούα χρόνες.

(Loukopoulos & Loukatos 1951: 45 §240)

Such fronted constituents are arguably located in a Topic position above C (along the lines of Rizzi 1997). Importantly, constituent fronting is ungrammatical in postnominal RCs. Examples such as those in (46), in which a constituent of the RC intervenes between the Head and *tu*, are never attested in the written or oral corpus, and are judged unacceptable by informants today:

- (46) # [**To** **isáni** [se ména [*tu* čo ftáni]]]...  
 DET.N.NOM.SG person.N.NOM.SG to I.ACC TU not molest.3SG  
 (cf. (45))

The ungrammaticality of (46) may be ascribed to the fact that SpecCP is filled by the Head, or to there being no Topic position above *tu*: we will not here decide between these two possibilities. The important point is that PhG postnominal RCs pattern with their Modern Greek counterparts in terms of the ungrammaticality caused by fronted constituents: in Modern Greek too, no constituent can be fronted from within the RC to a position above *pu* (Roussou 2000: 78; (47) is her (18c) in slightly adapted from):

- (47) θέλun [éna voiθó [(\*ta  
 want.3PL INDF assistant.M.ACC.SG DET.N.ACC.PL  
 aggliká) [*pu* na ta milái kalá]].  
 English.N.ACC.PL PU PRT 3CL.N.ACC.PL speak.3SG well  
 'They want an assistant who speaks English well.'

We would like to interpret this parallel behavior of PhG and Modern Greek to mean that postnominal RCs in the two languages are structurally similar.

## 7. SUMMARY AND CONCLUSIONS

We have argued that prenominal and postnominal RCs in PhG have different structures and different origins. We first showed that postnominal RCs involve a raising derivation, whereas prenominal ones are of the matching type. Regarding the origins of the prenominal RCs, contrary to standard assumptions, we proposed that this structure did not emerge solely through contact with Turkish, but rather that it came about as a consequence of the morphological fusion of the exponents of an external determiner and invariant relativizer in a HRC structure, plausibly around the 3rd century CE. This morphological fusion eliminated SpecCP (or any other specifier positions between D and C) as a possible landing site for the internal (or the external) Head, leaving a prenominal matching derivation as the only option. According to our proposal, the role of Turkish influence consisted in fostering the pre-existing prenominal RC structure. To account for the relatively recent genesis of postnominal RCs, we proposed that language change was actuated through contact with Modern Greek. This claim was based on two characteristics common to both Modern Greek and PhG postnominal RCs: both are of the raising type and neither allow for constituent fronting. Our paper thus not only gives a diachronic explanation of two types of HRCs in PhG which correctly predicts their synchronic structural peculiarities, it also lends support to the claim that both matching and raising derivations for RCs must be acknowledged, even within a single language.

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