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South by Southeast.
A syntactic approach to Greek and Romance microvariation

Abstract

This article argues for the relevance of parametric syntax in the contrastive analysis and historical classification of varieties that are closely intertwined geographically, genealogically and sociolinguistically. We show that Longobardi and Guardiano's (2009) Parametric Comparison Method, already successfully applied to the macroclassification of a number of scattered Indo-European languages (Longobardi et al 2013), can analyze microvariation equally successfully. Just by departing from the nominal syntactic database used for the core Indo-European languages and improving on it, the nominal syntax of several contemporary Romance and Greek varieties could be revealingly analyzed. On this basis, we are able to move towards sketching a reliable picture of the history and the geocultural factors that shaped linguistic diversity in the South-Central and East Mediterranean up to the Black Sea. The analysis attempts to lay down some grounding problems, tools, and hypotheses for a novel quantitative framework in the study of syntactic dialectology.

1. *Introduction*

This paper explores the potential of formal syntax for phylogenetic research and for the classification of closely related linguistic systems, along the lines of a program initiated as early as in Klima (1964). We couch our analysis in the Principles and Parameters framework, taking syntactic parameters to be the real *loci* of syntactic variation and change. To this end, we employ parameter values as *comparanda* (Roberts 1998) and as

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taxonomic characters for historical reconstruction (Longobardi 2003). Specifically, we apply to Romance and Greek dialects Longobardi and Guardiano's (2009) Parametric Comparison Method (PCM), which has been recently successfully tested in the classification of Indo-European languages (Longobardi et al 2013) and some other languages of Europe (Longobardi et al. 2015a).

In particular, we want to test the effectiveness of the PCM in addressing microvariation. By "microvariation" we mean three subcases: (i) the set up of genealogically very closely related varieties, (ii) the variability across languages that belong to distinct genealogical groups but are in close contact in a limited geographical area, and (iii) the sociolinguistic stratification of small and endangered speaking communities. All such situations are well represented in Southern Italy (both within Romance and between Romance and Greek varieties), and will be addressed in this paper.

Due to their relevance in the area, we selected 7 Romance dialects (Campano, Salentino, Northern and Southern Calabrese, and 3 varieties spoken in Sicily) and the two extant Italiot dialects of Greek (Salento and Calabria Greek). The location of these dialects can be seen in map 1 in the Appendix.

To strengthen the study of the internal structure of the families, we extended our comparisons to some "standard" Romance languages, namely Italian, French, Spanish, Portuguese and Romanian, and Greek varieties, namely Standard Greek, Cypriot Greek, and Romeyka Pontic (cf. map 2 in the Appendix).

The results suggest that the PCM can be successfully applied to microvariation, with some *caveats* - most importantly the need for more and finer-grained parameters to achieve higher resolution, which, as we argue below, in fact further supports the idea that syntax carries a historical signal. Moreover, the East Mediterranean and the Black Sea are geographical domains for which instances of language contact and their conditions are fairly well documented and can be traced more effectively, a point which will be further expanded with original hypotheses in this article.

Therefore, the application of the PCM to such varieties can shed light on questions about distinguishing parameters with deep phylogenetic value from parameters more prone to contact-induced change/areal effects, and both from those more susceptible to homoplasy. It can also clarify correlations between areal effects and geocultural factors. Knowledge of this sort is potentially transferrable to wide-range comparisons as well, and to a general theory of syntactic phylogenetic research.

Our discussion starts with a presentation of the PCM (Section 2). Then, after an overview of the historical, sociolinguistic and geocultural factors that shaped the dialects considered in our analysis (Section 3), we present a syntactic classification of Greek and Romance on the basis of Longobardi et al.'s (2015b) parameters (Section 4). Such parameters will not allow us to obtain a fully stable classification (especially within Southern Italian Romance), because they do not capture all the syntactic differences displayed by the varieties in question. Indeed, some distinctions in that area call for the postulation of new, finer-grained, parameters (discussed in Section 5). The situation is different within the Greek-speaking world outside Italy (Section 6). The analysis of all such instances of microvariation detected across the varieties of our sample provided us with a superset of parameters (Table A+, figure 20) consisting of all those used in Longobardi et al. (2015b) for larger-distance comparisons plus the subset of novel ones discussed in Section 5, on which a number of revealing taxonomic experiments are conducted and described (Section 7).

2. *The Parametric Comparison Method*

2.1. *Dialectology and its challenges for comparative methods*

One of the most salient challenges for the comparison and classification of languages is posed by the case of microvariation. When one tries to zoom in toward decreasing historical diversity, it becomes harder to find a set of entities discretely measurable and with sufficient definition to meaningfully quantify diversity among languages. This potentially raises new challenges with respect to some of the main problems that comparative methods wish in principle to address (Guardiano and Longobardi 2016):

(1) a. Correspondence problem
b. Probability problem
c. Metric problem
d. Globality problem

In clearly related languages, the Classical Comparative Method (CCM) can at the same time (a) prove cognacy by setting up precise correspondence sets and (b) identify chance-proof resemblance patterns within them (solving the "correspondence" and "probability" problems above, respectively).

However, the CCM is often at odds with objectively quantifying degrees of similarity or divergence among taxonomic units (the "metric" problem), the more one focuses on decreasing differences, like among close varieties.

As for the so-called "globality" problem, it is a resolution problem that pertains to the difficulty of identifying appropriate *comparanda* for very distant languages: in such cases, the application of criteria which are common in methods such as the CCM (e.g. systematic sound correspondences) normally fails, as it yields the same (i.e. maximum) distance (total dissimilarity) for all languages for which no common etymology can safely be traced. Therefore, no reliable phylogeny for such languages can be achieved in this way, thus requiring different methods. In the case of very closely related languages, on the other hand, what arises is the inverse resolution/globality problem: use of *comparanda* appropriate to identify language families as big as Indo-European or even Romance, may yield the same minimum distance (i.e. total similarity) when applied to dialects of the same language, thus failing to distinguish them and encode their distances within a phylogenetic tree.

2.2. *Microvariation and the PCM*

In this paper, we employ syntax and the PCM as a possible answer to the metric and the resolution problems presented above. The method formalizes the availability or unavailability of certain syntactic properties as binary syntactic characters, which in principle enable us to calculate the syntactic distance between any two languages, and to generate and validate evolutionary representations for such language sets. By being discrete and finite, syntactic characters further circumvent the metric problem, and can address the question of what kinds of syntactic information are appropriate and specific enough to solve the resolution/inverse globality problem.

The focus of the method is not on surface morphosyntactic patterns varying across languages (available/unavailable, marked/unmarked word orders, exponence of agreement etc.), but rather on abstract syntactic parameters. This choice is motivated by the idea that a single parameter value is responsible for a series of co-varying surface manifestations, so that one parametric change is responsible for a cluster of observable morphosyntactic changes. By collating and contrasting an appropriate amount of parameter values in two related languages, the extent of divergence from the ancestral language is neither over- nor under-stated. Redundancy is also avoided in

that the system disregards apparent similarities between superficially similar patterns which, however, have different sources or different underlying representations.

Further avoidance of redundancy is achieved through an explicit system of internal implications. The PCM is designed in such a way that we can control for the non-independence of characters. Properties compatible with a positive or negative value of a certain parameter (represented as + or – in Table A below, figure 2), but which are deducible from the states of one or more other parameters, are not represented as a potential *comparandum*, because such a property is not the result of an independent historical process, i.e. a distinct parametric change. As a consequence, certain parameters are considered to be relevant for a language X, and thus "active" in X, only when a number of other parameters is in a certain state: otherwise the state of such parameters is 0, and they will not be taken into consideration when calculating the syntactic distance of X from other languages. The list of characters employed includes explicit universal hypotheses about implications among parameters.

Therefore, out of the total number of parameters used, any two languages may only be compared with respect to the subset of parameters for which neither language has a 0 setting. The syntactic distance of two languages will be taken to be the *ratio* of the number of their differences to the cardinality of such a subset (i.e. to the sum of identities and differences) and will be defined as the "Normalized Hamming (or Jaccard) distance" of the corresponding strings of parameter values (2):

(2) $D_{SYN} = d/(i+d)$

The parameters employed as *comparanda* in our system were selected on the basis of Longobardi's (2003) "Modularized Global Parametrization" strategy, i.e. the exhaustive systematization of syntactic variation in one specific module of grammar. The module used for our purposes is that of nominal syntax, as it appears to display a limited amount of interaction with other domains of syntax and a lesser degree of susceptibility to information-structural pressures which are often supposed to be triggers of diachronic instability.

3. *Some historical and sociolinguistic notes*

3.1. *Romance in Southern Italy*

Our sample of Southern Italian Romance varieties (cf. map 1 in the Appendix) includes 2 Upper dialects, Campano (S. Maria Capua Vetere - CE) and Northern Calabrese (Verbicaro - CS), and 5 Extreme dialects: Salentino (Cellino San Marco - BR), Southern Calabrese (Reggio Calabria), and 3 dialects of Sicily (Mussomeli - CL, Ragusa, and the Gallo-Italic dialect of Aidone - EN)[1].

Campano is to be ascribed to the Upper Southern dialect group[2], which is traditionally identified as the area South of the Roma-Ancona isogloss, and whose Southern boundaries separate it from the areas where Extreme dialects (Pellegrini 1977, Ledgeway in press) are spoken[3]. Written attestations of varieties of Campano can be traced back at least to the late 13th century (Ledgeway 2009).

The Northern Calabrese dialect belongs to the so-called "Lausberg area", so geo-linguistically defined after Lausberg (1939), mainly on the basis of morpho-phonological features. The label refers to a conservative linguistic zone encompassing - from the Tyrrhenian to the Ionian Sea - Northern Calabria and Southern Basilicata (Rohlfs 1972, Rensch 1973, Fanciullo 1988, 1997, Martino 1991, Romito et. al. 1996, a.o.). The unique characteristics of the Lausberg area dialects[4], indeed, single them out from the whole rest of Italo-Romance, and rather link them to isolated or remote regions of the overall Romance-speaking area.

The Romance dialects spoken in Salento are classified among the Extreme Southern varieties. Yet, geographically, they are separated from the rest of the Extreme group, which includes the dialects spoken in Southern Calabria and Sicily, and are actually contiguous with the Upper Southern

[1] Labels adopted in tables and figures: Campano = Cam; Northern Calabrese = NCa; Salentino = Sal; Southern Calabrese = SCa; Mussomeli = MuS; Ragusa = RGS; Aidone = AdS.

[2] The traditional criteria of classification are purely phono-morphological (for vowel systems cf. Maiden 1997, Savoia and Maiden 1997).

[3] The main point of distinction between Upper and Extreme dialects is diachronic vocalic changes, which resulted in a heptavocalic tonic system (roughly corresponding to the Proto-Western-Romance vowel system) in the Upper group and a pentavocalic tonic scheme in the Extreme varieties. Among other phonological aspects, a neat divide between the two groups is also set by the outcome of the atonic final vowels, with a general merger of them into *schwa* in the Upper varieties and /a i u/ distinction in the Extreme ones.

[4] Notably peculiar stressed vowel systems ("Sardinian" and "Romanian" types, a.o.; cf. Fanciullo 1997), or the retention of original endings within verb paradigms (Silvestri 2007, 2009).

areas, with an uninterrupted road connection already since the 3rd century BC (namely the Via Appia, originally built between 312 and 264). The earliest attestations in Salentino date back to the 11th century (Cuomo 1977).

The Romance dialects spoken in the area of Reggio Calabria have been attested since the 14th century (Piromalli 1996). They are usually classified among the Sicilian dialects, as opposed to those spoken in the Central and Northern areas of Calabria. Some of their phono-morphological and especially lexical peculiarities have often been related to the rich Greek substrate still visible in that area (Rohlfs 1977, 1979)[5].

The history and classification of the languages of Sicily are well-known (Ruffino 2013, vol. I, and literature cited): the morphophonological and lexical traits of the dialects spoken in the island have been described in detail, often along with the conditions of use, distribution across the population, and relation with the (regional) varieties of Italian spread in the area. For the purposes of the present analysis, we have selected three varieties: one related to an urban context, in the South-East (Ragusa), one from a more rural area in the Center (Mussomeli), and one belonging to a "minority group" (the Gallo-Italic dialect of Aidone[6]).

3.2. *The Greek-speaking world*

3.2.1. *Italiot Greek*

The two Greek-speaking enclaves in Southern Italy are located in Salento (province of Lecce) and Southern Calabria (province of Reggio Calabria).

Historically, the presence of Greek in Southern Italy has been massive and uniform: the whole area (roughly including large portions of the regions of Sicily, Calabria, Basilicata and Puglia) was Greek-speaking before the spread of Latin (Rohlfs 1972; Fanciullo 2001, a.o.), and the Greek *substratum* has influenced the local Romance varieties in various respects (cf. Ledgeway 2013 and literature cited). Therefore, the two current enclaves are actually the relics of a much more widespread Greek-speaking community, no matter whether their origins go back to the Great Greek Western

[5] At least two peculiar morpho-syntactic features, the extended use of the synthetic past tense, conveying present perfect and punctual past (whereas the analytic form is employed with a peculiar past resultative reading) and the dual complementizer system (Ledgeway 2006), are displayed consistently in the dialect of Reggio Calabria, and have been interpreted (see Ledgeway 2013 and references therein) as the output of Greek influence.

[6] Rohlfs (1966), Trovato (1981, 1989), Toso (2008), among many others.

Colonization or to more recent events[7]. Interestingly, though, the relation of Salento and Calabria Greek to the original Greek element has been shown to be unbalanced, as pointed out by Fanciullo (2001: 76): «whereas Bovese (Calabria Greek) is directly connected to the Greek of Graecia Magna (an indication of this can be precisely the large number of Doric items Bovese preserves), Grico (Apulia Greek) could originate in the Hellenization of Southern Apulia during the (late) Roman empire».

Sociolinguistically, Greek in Southern Italy is associated with low social prestige: Greek-speaking communities are small and traditionally located in rural, poor areas. In recent years, their "social prestige" has improved, after various revitalization campaigns, especially in Salento, where in general the sociolinguistic conditions of the Greek communities are better than in Calabria[8]. Manolessou (2005:105) notes for Salento that «in contrast to Calabria, the environment is an ally and not an enemy of the Greek language: Salento is a fertile plain, currently experiencing a period of economic and touristic development, something which has repercussions on the prestige of the Greek dialect».

In general, experts agree that Greek in Southern Italy is facing a condition of regression/obsolescence: "true" native speakers disappear (these varieties are no longer acquired as first languages), and no Greek speaker is monolingual (they all speak a Romance dialect, and often, especially young generations, also a regional variety of Italian; however, none of them is predominantly Greek-speaking). While traces of "resilience" are still visible in Salento (Miglietta & Sobrero 2007), Greek is nowadays "practically extinguished" in Calabria (Martino 2009: 251). Here, the Greek-speaking villages in the Aspromonte[9] were almost completely isolated (and therefore monolingual) until the second half of the 20th century, when a massive *diaspora* toward the coast and Reggio Calabria (where only Romance varieties were spoken) took place: as a consequence, most people, as soon as

[7] For recent summaries of the debate, cf. Fanciullo (2001), Manolessou (2005) and references therein.

[8] Sobrero and Romanello (1977); Gruppo di Lecce (1980); Miglietta and Sobrero (2006, 2007); Romano and Marra (2008), a.o. Cf. also, for a summary and further bibliography, Guardiano (2014), Guardiano and Stavrou (2014, 2015).

[9] For a detailed description of the historical and sociolinguistic conditions of these communities, and of their language, cf. at least Karanastasis (1974, 1984, 1992); Katsoyannou (1992a/b, 1995, 1997, 1998, 1999a/b, 2001); Katsoyannou and Nucera (1986); Manolessou (2005); Morgante (2004); Parlangeli (1960); Profili (1983, 1985, 1999); Ralli (2006); Troiano (1982), among many others.

they left their villages and moved in the Romance-speaking areas, adopted the local dialect(s) and almost abandoned their own native language. Therefore, nowadays, the remaining speakers of Greek in this area are in fact semi-speakers.

For this reason, we decided to complement our data with a selection of written records, which witness an older tradition of spoken language[10]. While information collected from the speakers in Salento is consistent (with very few exceptions) with textual sources, in Calabria we noticed discrepancies between the judgments provided by the speakers and the evidence of the texts, which, in some cases, lead to opposite parameter settings. Thus, we opted for presenting two separate strings of parameter values for Calabria Greek: Calabria Greek A (the language as documented in the written records) and Calabria Greek B (the language as documented by contemporary semi-speakers)[11].

In general, it emerged that the written records tend to exhibit more "conservative" traits: they seem to be more reluctant to abandon the Greek patterns, and are less prone to innovations (Guardiano and Stavrou 2014); this may obviously be due to their very nature as written texts (even though they ultimately derive from an oral tradition), but also to the fact that they probably reflect a diachronic stage where the language was still robust, spoken mostly by monolingual speakers, thus not yet massively exposed to contact with Romance. As pointed out, Greek-speaking villages in Calabria used to be almost completely isolated from the neighboring (Romance) communities (Guardiano and Stavrou 2015): as it happened, contact with Romance was abrupt and "catastrophic". Therefore, the data collected from current (semi-)speakers expectedly display traits likely to have been introduced after contact with Romance and, as such, innovative (Guardiano and Stavrou 2015).

In Salento, instead, the relation between Greek and Romance has traditionally been more balanced: contact between the Greek enclaves and their Romance neighbors, mostly due to the abovementioned geographical

[10] For Calabria Greek: Comparetti (1866), Capialbi and Bruzzano (1885), Caracausi and Rossi Taibi (1959), Falcone (1973), Crupi (1980), Condemi (1995). For Salento Greek: Pitrè (1872), Palumbo (1886, 1887, 1910, 1912, 1978), Mancini (1903), Mansi (1937), Aprile (1972), Montinaro (1994), Aprile (1998), Aprile et al (1978, 1980), Stomeo (1980), Tommasi (1998), Sicuro (1999), Orlando (2002), other collections of tales and folk songs available on the web.

[11] Labels adopted in tables and figures: Salento Greek = SaG; Calabria Greek A = CGA; Calabria Greek B = CGB.

condition, has been much more frequent, systematic, reciprocal, and gradual. Indeed, we will see below (Section 5) that traces of such contact with Romance are visible in nominal syntax as well. Interestingly, the resulting interference patterns end up being, eventually, strikingly similar to the ones observable in Calabria Greek B (Guardiano and Stavrou 2014 and 2015).

3.2.2. *Cypriot Greek*[12]

The Cypriot variety of Greek is considered to have emerged «in its distinctive modern guise» (Horrocks 2010: 360) in the text of the *Assizes of the Kingdom of Cyprus and of Jerusalem* (1300-1350), the Greek translation of the laws of the Frankish kingdom of Cyprus (1192-1486). The Franks arrived in Cyprus in the late 12th century from the Holy Lands, where they had travelled as crusaders a century earlier. The result was extensive processes of language contact and multilingualism[13], which continued after the arrival of the Lusignans on the island (Grivaud 1995, 2005). Upon their arrival in Cyprus, the Franks encountered the native variety of Greek, probably some spoken version of the Byzantine *koiné*, possibly closer to an Eastern *koiné*, also claimed to be a common substratum to the varieties of the Dodecanese (Tsopanakis 1970-71: 136, 181). This spoken variety had evolved over a period of five centuries starting with the Arab raids of 632-902 which signaled the gradual detachment of Cypriot from the Byzantine core (Terkourafi 2005: 347), and it existed in Cyprus alongside the Byzantine *koiné* (the language of religious manuscripts) in a situation of diglossia very common across the medieval Greek-speaking world[14].

Present-day Cypriot Greek is in continuous contact with Standard Greek, not merely because Standard Greek is the official language of the Cypriot State, and the language of education and administration, but also as the result of continuous cultural exchanges (e.g. shared mass media, Cypriots studying or working in Greece and vice-versa); practically all Greek Cypriots are bi-(dia)lectal, speaking both their native dialect and a local version of Standard Greek.

[12] Label used in tables and figures = CyG.
[13] Minervini (1995, 1996), Aslanov (2002, 2006), Baglioni (2006a, 2006b).
[14] Grivaud (2005: 221), Baglioni (2006b: 21-22).

3.2.3. *Romeyka Pontic Greek*[15]

Romeyka belongs to the Pontic Greek (PG) group, which, together with Cappadocian, forms the core of the Asia Minor Greek (AMG) group[16].

Affinities among AMG varieties led Dawkins (1931:399) to hypothesize that a medieval AMG *koiné* must have existed, whose idiosyncratic development possibly preceded and was facilitated by the incipient Seljuq invasions of the 11th century (Dawkins 1916: 205, 213; Browning 1983: 130).

Some claim, however, that at least some distinctive AMG developments originate in the regional *koiné* Greek spoken in Asia Minor and adjacent islands (e.g., Cyprus) during Hellenistic and Roman times (Thumb 1914:199), although according to Horrocks (2010:113–114), there is little relation between the grammatical innovations shared by the modern dialects and the region-specific characteristics of the Hellenistic *koiné* of Asia Minor.

In Sitaridou (2014a) it was argued that for Proto-Pontic the *terminus ante quem* is the Hellenistic times (strong thesis), not the middle of the Late Medieval period, as claimed by Horrocks (2010: 382), Holton and Manolessou (2010) for other Modern Greek dialects[17]. This does not imply that Greek in Pontus was not in contact with Medieval Greek, but rather that the innovations spread in discontinuous manner (in the sense of Chambers and Trudgill 1980). In fact, the retention of archaic features in PG must be due to Pontus remaining relatively stable within the confines of the Byzantine Empire between the 4th and the 10th century, although Greek in Pontus was undoubtedly given a boost by the dissolution of Byzantine rule in Constantinople in 1204 and the establishment of the Empire of Trebizond (Bryer 1975).

The relative stability was interrupted by Islamization which was more widespread in the regions of Of and Tonya than in other parts of Pontus in the 15th-18th centuries (Vryonis 1986). As a result, PG branched out post-islamisation (17th century) into: (i) a variety spoken by Muslims (referred to as /rome(a)ika/ by its speakers and which is spelt "Romeyka" to distinguish it from other historical/contemporary varieties of AMG also referred to as /romeika/); (ii) the one spoken by Christians, which, through contact with "high" Greek already prior to the expulsion in 1923, has since aligned to MG and came to be known from 19th century onwards as Pontic Greek (Sitaridou 2014b).

[15] Label used in tables and figures = RPG.

[16] Andriotis (1995: 100–107), Horrocks (2010: 398–404), Kontossopoulos (1981).

[17] The weak thesis would be that the terminus post quem was the 11th century (Dawkins 1931).

Geographically adjacent languages include Turkish (the dominant language), Turkish dialects, Armenian (spoken by Hemshin population), and Laz.

Crucially, the data we use in this paper derive from Romeyka, the most conservative Pontic Greek variety, as spoken in Of today, in the Çaykara region in the village of Anasta (Sitaridou 2013, 2014a) – see figure 1:

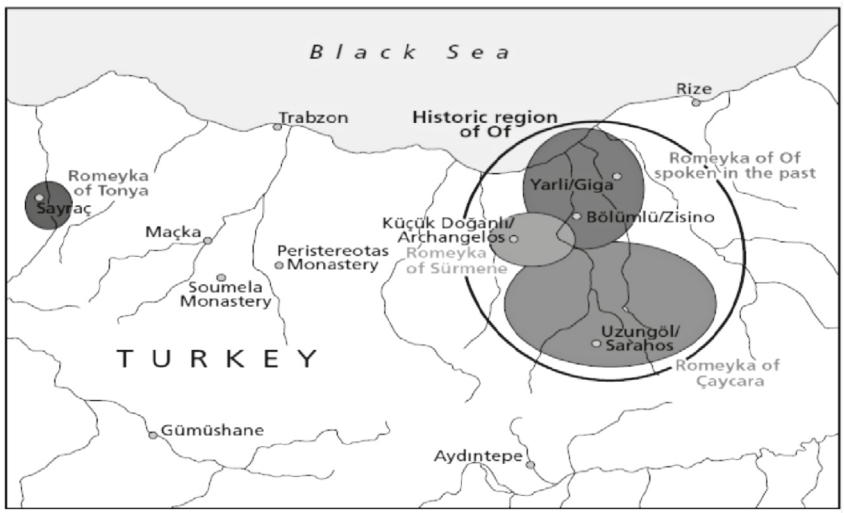

Figure 1. The historical region of Of (Sitaridou 2013:99).

4. *A preliminary phylogenetic classification*

4.1. *Applying a recent parametric dataset to our sample*

The collection of parameters employed for the latest wide-range classification experiment in the PCM framework (Longobardi et al. 2015b) consists of 75 parameters (Table A, figure 2), divided into three large subsets, namely (i) parameters governing the grammaticalization of features and denotation/determination (parameters 1-33), (ii) parameters governing non-argument modification, including adjectives (and noun-placement with respect to them) and relative clauses (parameters 34-47), (iii) parameters governing arguments of nouns, mainly genitives and pronominal possessives (parameters 48-75).

	TABLE A		RGS	MuS	AdS	SCa	Sal	NCa	Cam	It	Sp	Fr	Ptg	Rm	Lat	CIG	NTG	SaG	CGA	CGB	Grk	RPG	CyG	Tur		
1	± gramm. morphology	FGM	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGM	1
2	± gramm. person +FGM	FGP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGP	2
3	± gramm. number +FGP	FGN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGN	3
4	± gramm. collective ¬↛FGN	GCO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GCO	4
5	± gramm. gender +FGP	FGG	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FGG	5
6	± NP over D +FGP	NOD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOD	6
7	± feature spread to N +FGN or +GCO, -NOD	FSN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FSN	7
8	± numb. on N +FSN	FNN	+	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	FNN	8
9	± gramm. boundedness	CGB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	CGB	9
10	± free incorporation +CGB	FIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	FIN	10
11	± gramm. article +FGP	DGR	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	DGR	11
12	± strong article -CGB, +DGR, ¬-FNN	CGR	+	+	+	+	+	+	0	+	+	0	+	+	0	-	-	+	+	+	+	+	+	0	CGR	12
13	± strong person (+FGN, ¬↛FSN) or +DGR	NSD	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+	+	+	+	+	0	NSD	13
14	± free null partitive Q +FNN, ¬↛CGB	DPQ	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	DPQ	14
15	± article-checking N (+FGN, ¬↛FSN) or +DGR	DCN	-	-	-	-	-	-	-	-	-	-	-	-	+	0	-	-	-	-	-	+	-	0	DCN	15
16	± def on relatives +DGR	DOR	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0	DOR	16
17	± D-controlled infl. on N +FSN	DIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIN	17
18	± plural spread from cardinals +FSN, ¬↛GCO	CPS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	CPS	18
19	± numerical (partial) atomizer +FGN, +CGB	NPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	NPA	19
20	± atomizer +NPA, -DGR	BAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	BAT	20
21	± gramm. classifier ¬↛BAT	FGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FGC	21
22	± gramm. bare classifier +FGC	GBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GBC	22
23	± indefinite bare classifier +GBC	IBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IBC	23
24	± bounded.-checking N +NPA	CCN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	CCN	24
25	± null-N-licensing art -DCN, +NSD	DNN	-	-	-	-	-	-	-	-	+	-	+	0	0	+	+	-	-	-	-	0	-	0	DNN	25
26	± gramm. temporality	FGT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FGT	26
27	± gramm. text anaphora ¬↛DGR	DGP	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	DGP	27
28	± clitic *location* +BAT	TCL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TCL	28
29	± strong partial *location* ¬↛TCL	TPL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	TPL	29
30	± strong *location* +TPL	TSL	+	+	+	+	+	+	+	+	-	+	+	-	-	-	-	+	+	+	-	+	-	+	TSL	30
31	± adjectival *location* -TPL or -TSL	TAD	0	0	0	0	0	0	0	0	+	0	0	+	+	+	0	0	0	+	0	+	0	0	TAD	31
32	± D-checking *location* (+FGN, ¬↛FSN) or +DGR, +TPL or (-CGR, +TAD)	TSP	+	+	+	+	+	+	+	+	+	+	+	+	0	-	-	+	-	+	-	-	-	0	TSP	32
33	± Double *location* +TPL	TDL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TDL	33
34	± NP-heading modifier	HMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HMP	34
35	± structured APs	AST	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	AST	35
36	± feature spread to struct. APs +FSN, +AST	FFS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FFS	36
37	± feature spread to pred. APs +FGN or +GCO	FSP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FSP	37
38	± D-controlled infl. on A -NSD, +FFS	ADI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	ADI	38
39	± NP over obliques	ADR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	ADR	39
40	± relative extrap. -ADR	AER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	AER	40
41	± free reduced rel +AST	ARR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	ARR	41
42	± N-raising with obl. pied-piping +AST	NPP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NPP	42
43	± N over cardinals -NOC	NOC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOC	43
44	± N over ordinals -NOC	NOO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOO	44
45	± N over M1 As -NOO, -NPP	NM1	+	+	+	+	+	+	+	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-	NM1	45
46	± N over M2 As -NM1	NM2	0	0	0	0	0	0	0	+	+	+	+	+	-	-	0	0	0	-	-	-	-	-	NM2	46
47	± N over As -NM2	NOA	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	-	-	-	NOA	47
48	± Poss°-checking N	GCN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	GCN	48
49	± Gen-feature spread to N +FGP, +GCN	GFN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	GFN	49
50	± Acc-licensing N	GAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	GAL	50
51	± uniform Gen ¬↛GFN	GUN	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	0	GUN	51
52	± GenS ¬↛NSD, -GUN	GFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GFS	52
53	± free Gen -GUN	GFR	+	+	+	+	+	+	+	+	+	+	+	+	0	0	-	-	-	-	-	-	-	0	GFR	53
54	± GenO ¬↛GUN, -GAL or ¬↛GFN	GFO	-	-	-	-	-	-	-	-	-	-	-	-	0	0	+	+	+	+	+	+	0	0	GFO	54
55	± prepositional arguments +ADR	GPR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	0	GPR	55
56	± gr. generalized linker	EZ1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ1	56
57	± gramm. non-clausal linker -EZ1	EZ2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ2	57
58	± gramm. arg. linker ¬ +EZ1 ,¬↛EZ2	EZ3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ3	58
59	± phi-licensed poss. +DCN	DMP	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	-	0	0	DMP	59
60	± phi-licensed Gen +DMP	DMG	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	DMG	60
61	± head Genitive iteration +GCN or +DMG, -EZ2	HGI	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	-	HGI	61
62	± obligatory inalienable Genitive	GSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GSI	62
63	± obligatory Genitive +GSI	GST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GST	63
64	± Genitive inversion +GFN	GEI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	GEI	64
65	± N over GenO ((¬-GFO, -GAL or ¬↛GFN) or +PGO), -NOA or -AST	NGO	0	0	0	0	0	0	0	0	0	0	0	0	-	-	+	0	0	0	+	-	+	0	NGO	65
66	± N over ext. arg. -NGO or (¬↛GFO, -NOA or -AST)	NOE	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	0	0	+	0	+	NOE	66
67	± free MOD +AST, +NGO	AFM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	+	0	AFM	67
68	± class MOD -AFM	ACM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	ACM	68
69	± def on all (+NSD, (+ARR or +DCN or +AFM or +ACM)) or (+DCN, +CGR)	DOA	-	-	-	-	-	-	-	-	-	-	-	0	+	+	-	+	-	+	+	+	0	0	DOA	69
70	‡ Cons. Pr. +AST, (-NM1,+ADR) or (+NPP or ¬-NM2, -ADR)	ACP	0	0	0	0	0	0	0	+	+	+	+	+	-	-	-	0	0	0	-	+	+	0	ACP	70
71	± clitic poss. on N	NCL	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	-	NCL	71
72	± adjectival poss. ¬↛ GFN	APO	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	-	-	-	+	-	0	APO	72
73	± adjectival Gen +APO	AGE	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	0	0	0	0	-	0	0	AGE	73
74	± D checking poss. +DGR, +NSD or ¬↛CGR, ¬↛GFN	PDC	-	-	-	-	-	-	-	-	+	+	+	-	0	-	-	-	-	-	-	-	-	0	PDC	74
75	± enclitic poss. on As +AST, -APO, ¬↛DGR or -PDC, ¬↛DMP	ACL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	+	0	+	0	ACL	75
	TABLE A		RGS	MuS	AdS	SCa	Sal	NCa	Cam	It	Sp	Fr	Ptg	Rm	Lat	CIG	NTG	SaG	CGA	CGB	Grk	RPG	CyG	Tur		

Figure 2. Table A (Longobardi et al 2015b), with the parameter values of the languages considered in this article.

Figure 2 lists the 75 parameters of Table A, along with their values set in each of the contemporary languages considered in this article[18].

Feeding the pairwise distances obtained from the set of characters in figure 2 to the KITSCH distance-based phylogenetic algorithm (Felsenstein 1993), we obtain the following tree (figure 3):

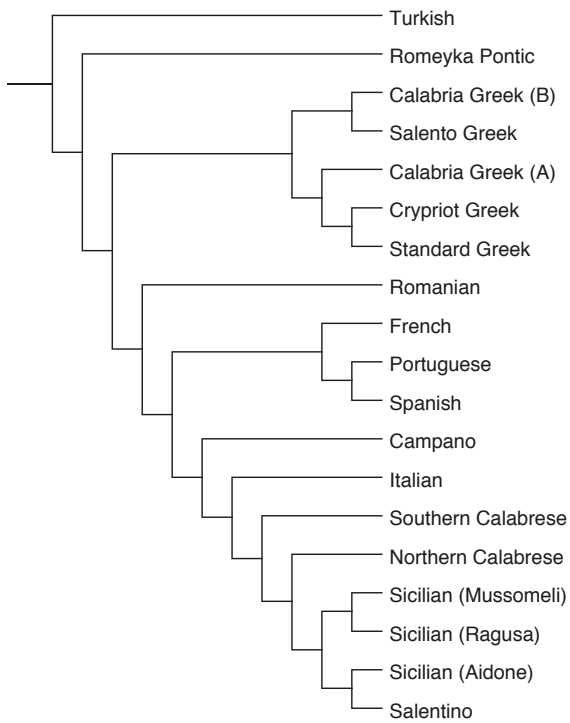

Figure 3. KITSCH tree calculated from figure 2.

[18] Turkish (Tur) was further included in this experiment, of course not understood as related to any of the above, but to visualize its potential secondary connection to Greek varieties.

In Table A, each parameter is identified by a progressive number (in the first column) and, additionally, by a combination of three capital letters (in the third column). The order of the parameters is not motivated except for ease of expression of crossparametric dependencies (see directly below), which are organized to go top-down.

The alternative parameter states are encoded as '+' and '-'. The symbol '0' encodes the neutralizing effect of implicational dependencies across parameters, i.e. those cases in which the content of a parameter is entirely predictable, or irrelevant altogether. The conditions which must hold for each parameter to be relevant (i.e. not neutralized) are indicated in the second column after the name of the parameter itself. They are expressed in a Boolean form, i.e.: either as simple values of other parameters, or as conjunctions (written ','), disjunctions ('*or*'), or negation ('¬') thereof. A few empirically uncertain states are indicated by '?'.

The tree successfully keeps Turkish as the obvious outlier, without being misled by its potential interference and influence on Romeyka. It further singles out Romance as a unit and distinguishes Italo-Romance from the rest of Romance, but it does not provide a fully satisfactory sub-articulation of the Greek varieties, e.g. it represents Romeyka as the outlier of the whole Greek-Romance cluster.

The internal classification of Italo-Romance is also unsatisfactory: Northern Calabrese falls together with the Extreme Southern varieties, while Campano is surprisingly singled out as the outlier of the whole "Italian" group. All such groupings are also quite unstable: indeed, in other replications of the experiment, Southern-Italian dialects (except Campano) end up in different clusters. Thus, the topology does not provide sufficient plausibility and stability.

4.2. *The need for higher resolution*

Descriptively, the varieties of our sample exhibit specific aspects of variation in nominal syntax that are not captured by the 75 parameters of Table A. Therefore, in order to account for them, we investigated and formulated a number of additional micro-parameters (parameters associated with certain intensionally definable classes of lexical items), in Roberts' (2012) sense.

In Section 5, we provide a detailed syntactic commentary on the properties that present special relevance for determining the analysis of Southern Italy Romance, as well as for comparing Romance to Italiot Greek. As we proceed, we introduce the new parameters needed, aiming at the most constrained theory possible, i.e. the least number of characters that can cover all the differing surface manifestations unveiled.

5. *Dimensions of variation in Southern Italy*

5.1. *Adjectives and noun movement*

One of the subsets of nominal parameters included in Table A (figure 2) describes adjectival modification, including noun-placement with respect to adjectives. In particular, parameters 43 (±*N over cardinals*) and 44 (±*N over ordinals*) govern the raising of the noun across numerals, and parameters 45 (±*N over M1 adjectives*), 46 (±*N over M2 adjectives*), 47 (±*N over adjectives*) select the options available crosslinguistically when the noun moves across the projections where adjectives are merged.

Adopting the (prenominally) base-generated sequence *numerals (Card > Ord) > structured adjectives (High > Manner1 > Manner2 > Argument)*, it is assumed that all nouns in a given language uniformly raise to one and the same structural position, crossing over none/one/some/every intervening adjectival position, the two extreme cases being instantiated e.g. by Germanic and Semitic, respectively.

Romance languages (Bernstein 1991, Crisma 1991, 1996, a.o.) display a good degree of variability in noun movement across adjectives. In Italian (and essentially in the other standard Romance languages of our sample), only *High* and *Manner1* adjectives can be prenominal, while *Manner2* and *Argument* ones cannot (3).

(3) a. un bel nuovo vestito blu italiano
a beautiful new dress blue Italian
a beautiful new blue Italian dress

b. *un bel nuovo blu vestito italiano
c. *un bel nuovo blu italiano vestito

A theoretically predictable second case (4) is that all adjectives can occur in prenominal position with the exception of *Argument* ones. Such a predicted case interestingly shows up in Romance as well, namely in Walloon (Bernstein 1991):

(4) one bèle bleuve cote alemande
a beautiful blue dress German
a beautiful blue German dress

Another theoretically expected case is a language with the noun raising above all adjectives except for the highest class. The Romance dialects of Southern Italy explored here represent such a case: indeed, noun placement with respect to adjectives is such that, compared to Italian, more classes of adjectives may appear postnominally (see Guardiano and Stavrou 2014).

In all the dialects of our sample, the adjectives possible in prenominal position are restricted to the counterparts (in each variety) of *bello* (beautiful), *buono* (good), more rarely *brutto* (ugly) and *cattivo* (bad), and to very few others, slightly variable in the dialects (Guardiano and Stavrou 2014). The generalization seems to be that there can be only up to one prenominal adjective, belonging to the class of *High* adjectives.

It then follows that, in these varieties, the noun reaches a structural position higher than the canonical landing site of the moving noun in Italian: in other words, while the assumed landing site of the noun is between *Manner1* and *Manner2* adjectives in Italian, in the Romance dialects of Southern Italy it is presumably between *High* and *Manner1* ones.

In fact, we are presented with a case of Romance-internal variability that uniformly contrasts all the dialects of Southern Italy to the rest of Romance. This is represented by minimal differences in the values of some of the abovementioned parameters, namely *±N over Manner1 Adjectives*, *±N over Manner2 Adjectives* and *±N over Adjectives*, as shown in figure 4.

Parameters	Implications	Walloon	Italian	S. Italy Romance
± N over M1 As		–	–	+
± N over M2 As	*-N overM1As*	–	+	0
± N over As	*-N overM2As*	+	0	0

Figure 4. Noun movement across adjectives (selection) in Romance.

Within Southern Italy Romance, Southern Calabrese displays a further peculiarity. Indeed, while the other Romance languages of Southern Italy seem not to accept any non-high adjective in prenominal position, Southern Calabrese apparently accepts some *Manner* adjectives as prenominal, but only when they receive emphatic interpretation (5).

(5) a. Paskàli àvi na kàsa gràndi
Pasquale has a house big
Pasquale owns a big house (a house that is big)

b. Paskàli àvi na GRÀNDI kàsa
Pasquale has a big house
Pasquale owns a really big house

Such a property seems to set Southern Calabrese apart from the rest of Southern Italian Romance, and is unlikely to be predictable on the basis of already existing parameters. Therefore, we included a new parameter, *±fronted prenominal adjectives*, whose value is + in Southern Calabrese, - in the rest of Southern Italy Romance.

An even more interesting aspect of variation in Southern Italy in the domain of adjectives is offered by the two Greek varieties, that display major

divergence from the rest of Greek and a large degree of convergence with Romance, arguably due to contact (Guardiano and Stavrou 2014).

As opposed to Romance, in most Greek varieties, including Standard Greek, all adjectives have always been able to occur in prenominal position, subject to ordering restrictions imposed by Sproat and Shih's (1991) semantic hierarchy. Postnominality of adjectives does arise, but, crucially, in definite nominals, it is only possible if the adjective itself is introduced by an additional definite article (a phenomenon often referred to as *polydefiniteness* or *determiner spreading*[19]). This sets Greek apart from Romance: crosslinguistic variation with respect to this phenomenon is accounted for by parameter 69 (*±definiteness on all*) in Table A, whose value is + in Standard Greek and - in Romance.

In the Greek varieties of Southern Italy, instead, like their Romance neighbors and unlike the rest of Greek, certain classes of adjectives (the same as in Romance) are excluded from the prenominal position. So, it follows that, in Italiot Greek, «an innovation was introduced, presumably under the Romance influence; namely noun movement to a functional layer above the lexical projection, in contrast with (the rest of) Greek, where no noun movement is assumed» (Guardiano and Stavrou 2014: 139).

Furthermore, while Salento Greek and Calabria Greek B seem to have adopted the Romance structure even for the postnominal pattern, Calabria Greek A has retained traces of the Greek pattern, i.e. the *polydefinite* construction in the case of definite nominals. This has been interpreted by Guardiano and Stavrou (2014) as a sign of conservatism motivated by the considerable isolation until recent times of the Greek-speaking communities in the area: «a viable hypothesis is that both Greek dialects had the *polydefinite* pattern, found in Ancient Greek and continuing to be a distinctive pattern of Modern Greek, but in GR [Salento Greek] it was lost

Parameters	Implications	Greek	Calabria Greek A	Salento Greek, Calabria Greek B	S. Italy Romance
± N over M1 As		-	+	+	+
± N over M2 As	*-N overM1As*	-	0	0	0
± N over As	*-N overM2As*	-	0	0	0
± Def on all		+	+	-	-

Figure 5. Noun movement across adjectives (selection) and *polydefiniteness* in Greek.

[19] Cf. Alexiadou (2014) for an up-to-date discussion.

under the pressure of Romance, whereas in BO [Calabria Greek A] it was retained. A likely explanation could be that the situation of BO [Calabria Greek A] is similar to the situation of Tsakonian in Mainland Greece: in both, speakers used to live in geographically very isolated areas [...]. If this line of reasoning is correct, then BO [Calabria Greek A] ends up as more conservative and less prone to contact than GR [Salento Greek]» (Guardiano and Stavrou 2014: 138-139).

5.2. *Demonstratives*

In Table A, crosslinguistic variation in the syntax of *demonstrative* items is defined by parameters 27 to 33 (Guardiano in prep). Those relevant for the purposes of the present analysis are 29 (*±strong partial location*), 30 (*±strong location*), 31 (*±adjectival location*) and 32 (*±D-checking location*). We analyze demonstratives as *complex* lexical items, universally available in all languages, and made of two distinct components, *definiteness* and *location*. Such components crosslinguistically manifest themselves either as merged into one and the same item (like English *this/that*), or as "split" into two separate lexical entities, one of which is often the *definite* article (when available). When demonstratives are "split", *definiteness* usually shows up in D, while *location* shows up either to the left of it (presumably a higher Spec; *+strong location*) or lower (*-strong location*), with various crosslinguistic options, parametrically defined (*±adjectival location*). In some languages, *location* can either occur to the left of D or in the low position, usually according to whether it has strong *deictic* force or *anaphoric* value, respectively[20] (*±strong partial location*). In languages where *definiteness* or other D-features are grammaticalized, if the *location* component is adjacent to D, it can either check such D-properties, and thus allow for the absence of the *article* (*+D-checking location*), or not, and thus co-occur with a visible *article* (*-D-checking location*). If *location* is not adjacent to D, D cannot be empty in such languages.

In Latin, demonstratives were not split, and occurred in two alternative positions: *DP-initial* and *adjectival*; the evolution from this system has given rise to a certain degree of (surface) variation in Romance: in Italian, demonstratives are uniformly *DP-initial*, and *D-checking*; Spanish and Romanian keep two separate positions: *DP-initial* demonstratives are *D-checking*, while lower ones are *adjectival* (and split); French, contrary to all other Romance

[20] Manolessou and Panagiotidis (1999).

languages, which have at least two separate items (distinguishing between *proximal* and *distal location*), has only one item, *ce*: the distinction between *proximal* and *distal location* can only be made via the addition of the adverbial-like element *ci/là* (Bernstein 1993). Such patterns of variation are parametrically represented in figure 6.

Parameters	Implications	Latin	Romanian, Spanish	Italian	French
± *strong partial location*		+	+	+	+
± *strong location*	+ *strong partial location*	-	-	+	+
± *adjectival location*	- *strong partial location* or - *strong location*	+	+	0	0
± *D-checking location*	+ *article and* + *strong partial location*	0	+	+	+
± *gramm. location reinforcer*		-	-	-	+

Figure 6. Demonstratives in Latin and Romance.

The Greek system, instead, is quite stable historically (Guardiano 2014). In spite of several switches in the meaning of individual lexical items (Manolessou 2001), the syntax of demonstratives hasn't changed from Classical (Guardiano 2003) to Modern Greek: two positions are available, one DP-initial, normally associated to stronger *deictic* force[21] (+*strong partial location*), and one lower (-*strong location*), presumably clitic to the first lexical category of the nominal structure, and *adjectival*. The *definite* and *location* components always show up as split (-*D-checking location*).

Differences between Standard Greek and Italian are parametrically represented in figure 7.

Parameters	Implications	Greek	Italian
± *strong partial location*		+	+
± *strong location*	+ *strong partial location*	-	+
± *adjectival location*	- *strong partial location* or - *strong location*	+	0
± *D-checking location*	+*article* and +*strong partial location*	-	+

Figure 7. Demonstratives in Greek and Italian.

[21] Manolessou and Panagiotidis (1999).

The Romance dialects of Southern Italy do not display any difference from Italian: demonstratives are *DP-initial* only, and are *D-checking* (Guardiano 2014).

In Salento Greek, demonstratives always occur DP-initially and are never accompanied by an article:

(6) a. ída túo ántrepo
I saw this man
I saw this man

b. ída cíno/íso ántrepo gióveno
I saw that man young
I saw that young man

c. * ída ántrepo cíno/íso (gioveno)

Therefore, Salento Greek differs from Standard Greek in two respects: the absence of a split demonstrative, and the rigid placement of the demonstrative in the *DP-initial* position. This pattern is superficially identical to the Romance neighbors. This might lead to the hypothesis that Salento Greek borrowed such a pattern, as a consequence of interference.

In Calabria Greek, demonstratives regularly appear DP-initially and, especially in the accusative, alternate between a split form, where the *definite* component is morphologically separate from the *location* one, and forms where the two are fused into one and the same item (7). Speakers (Calabria Greek B) tend to prefer the non-split one, while the split forms are more frequent in written records (Calabria Greek A). In other words, older stages of the language were more similar to "Mainland" Greek, while more recent developments reflect the same patterns as Salento Greek.

(7) a. epándia túto ton iatró
I met this the doctor
I met this doctor

b. epándia túndo iatró
I met this-the doctor
I met this doctor

Interestingly, Cypriot Greek shows quite similar patterns. Indeed, while, contrary to Italiot Greek and like Standard Greek, it retains two separate

positions for demonstratives, it systematically features contracted forms of prenominal demonstratives, in a way reminiscent to Italiot Greek, when the definite article starts with /t/ (8). In the contexts that do not meet the phonological condition for contraction, a separate definite article is obligatory (9).

(8) a. túndon ánthropon
this-the man
this man

b. túndin jenékan
this-the woman
this woman

c. túndo práman
this-the thing
this thing

(9) a. tútos/džínos o ánthropos
this/that the man
this/that man

b. tútes/džínes i jenékes
these/those the women
these/those women

Therefore, it seems that, rather than a mere consequence of contact with Romance (i.e. direct borrowing of a Romance-like system), the system displayed by Salento Greek results from a language-internal process that ends up as superficially identical to Romance, but is in fact independently accessible, and presumably only indirectly triggered by contact.

Figure 8 sums up the parameter settings. Note that Salento Greek is parametrically identical to Italian (and Southern Italy Romance), and Cypriot Greek to Standard Greek. Indeed, in Cypriot Greek, the merger of *definite article* and *location* is still a purely morphophonological phenomenon, that seems not to affect the syntactic structure. In Salento Greek, instead, it has become generalized, with two (not necessarily concomitant) syntactic consequences: the freezing of *location* in the *DP-initial* position and the merge of the *definite* and the *location* parts into one single, non-split and *D-checking*, form. In other words, Cypriot Greek attests the initial stage of

the process, Calabria Greek A a transitional stage, and Salento Greek the final output.

Parameters	Implications	Greek	Cypriot Greek	Calabria Greek A	Calabria Greek B	Salento Greek	Italian
±*strong part. location*		+	+	+	+	+	+
± *strong location*	+ *strong part. location*	-	-	+	+	+	+
± *adjectival location*	- *strong part. location* or - *strong location*	+	+	0	0	0	0
± *D-checking location*	+ *article* and + *strong part. location*	-	-	-	+	+	+

Figure 8. Demonstratives in Italiot and Cypriot Greek (as compared to Italian and Standard Greek).

5.3. *Expletive articles with proper names*

Languages with *definite articles* vary according to whether they obligatorily use them also with *kind* and *proper* names or not. Longobardi (1994, 2005, 2008) showed that this follows from a deeper abstract property (named *strong person* in Longobardi and Guardiano 2009) that requires D to be visible in order to obtain a referential, whether *kind* or *object-referring*, interpretation of nouns. Visibility is achieved either through overt syntactic movement of N(P) to D or through merger of a dedicated element in D, often homophonous to the definite article, called an *expletive article* (also Vergnaud and Zubizarreta 1992). The first strategy is only available for (certain) proper names (and only in certain languages), while the second is available for all types of nouns.

Greek and Romance are *strong person* (parameter 13, NSD)[22]: *kind* names require a visible *expletive article*.

(10) a. *(i) ðinosávri éxun eksafanistí [Greek]
the dinosaurs have vanished
dinosaurs have become extinct

b. *(i) dinosauri sono estinti [Italian]
the dinosaurs are extinct
dinosaurs have become extinct

[22] Unlike English, which is *weak person*: kind names do not require any visible *expletive article*, and proper names do not raise to D (Longobardi 1994, 2005, 2008).

As for proper names, in Romance, movement to D is possible, hence no overt article is necessary:

(11) a. Gianni vecchio telefonerà domani
John old call.FUT tomorrow
old John will phone tomorrow

b. il vecchio Gianni telefonerà domani
the old John call.FUT tomorrow

c. *vecchio Gianni telefonerà domani

In standard Greek, noun movement is unavailable, as we saw above; therefore, proper names are left with only one predictable alternative: they require the *expletive article* (Longobardi 2001, Guardiano 2011a).

(12) a. írthe *(o) mikrós Jánis
came the little John
little/young John came

b. * írthe Jánis mikrós

Parameters	Italian (Romance)	Greek
± *strong person*	+	+
± *N over As*	+	-

Figure 9. *strong person* and N movement in Romance and Standard Greek.

Italiot Greek superficially behaves like Standard Greek (Guardiano 2014): both *kind* and *proper* names require a visible *expletive*. In Italiot Greek, though, obligatoriness of expletives with *proper* names cannot be derived from unavailability of noun movement, contrary to Standard Greek: in both dialects, as observed above, the noun raises high (over adjectives) in the DP. In other words, Italiot Greek seems to retain a Greek-like surface pattern even though the structural configuration that justifies it is lost. Since the phenomenon cannot be derived from the parameters in figure 9, the introduction of a new parameter, stating whether all proper names require a visible expletive even though noun movement is not precluded, was required:

Parameter	Implication	Italian	Greek	Italiot Greek
±gramm. expletive	*+N over As*	-	0(+)	+

Figure 10. *Grammaticalized expletive.*

In Southern Italy Romance, most proper names are consistently unarticulated, like in standard Italian, with one exception (Guardiano 2014): in Salentino, proper names referring to people/humans are always accompanied by an article.

(13) a. lu Ggjuànni vèkkju telèfona kraj
the John old call tomorrow
old John will phone tomorrow

b. * Ggjuànni vèkkju telèfona kraj

In Salentino, like in the rest of Romance (as noted above), noun movement is available; therefore, Salentino ends up being identical to Italian with respect to the parameters in figure 9: obligatory occurrence of the expletive with proper names cannot be predicted. Thus, in this respect, Salentino is like Italiot Greek: it introduces obligatoriness of *expletives* with proper names. However, there is still a difference between the two: while in Italiot Greek *all* proper names require an *expletive*, in Salentino it is limited to personal proper names only. This is captured by a further parameter, stating whether just a *subset* of proper names (rather than the whole class) requires the *expletive*[23]:

Parameter	Implication	Italian	Salentino	Greek	Italiot Greek
±gramm. partial expletive	*+N over As*	-	+	0(+)	+
±gramm. expletive	*+ gramm. partial expletive*	0	-	0(+)	+

Figure 11. *Grammaticalized partial expletive.*

Note that this property sets Salentino apart from the rest of Southern Italy, but is not unusual in other regional varieties of Italian, which in fact exhibit a high degree of variability: for instance, several Northern and various Cen-

[23] Note that examples of obligatory expletive articles are also to be found elsewhere, though restricted to specific and isolated lexical items.

tral varieties of Italian, as well as the corresponding dialects, require expletives with women's proper names, others also with men's proper names or surnames (Manzini and Savoia 2005). Therefore, though it may be tempting to attribute the obligatory occurrence of the *expletive* with proper names of persons in Salentino to contact with Greek (Ledgeway 2013), it also seems true that the mechanisms that trigger the obligatory presence of articles with personal proper names in Salentino are independently compatible with the internal structure of the Romance system. At best, surface evidence provided by Greek might have indirectly contributed to activation of such processes (Guardiano 2014), as it presumably happened with demonstratives in Salento Greek.

5.4. *Genitives*

In the domain of genitives, a broad distinction can be drawn between freely iterable genitives, usually adpositional (*free Gen* in our system, parameter 53, GFR) (14), and non-prepositional genitives occupying a specified non-iterable position in the structure. The positions crosslinguistically available for the latter type (Longobardi and Silvestri's 2013 "functional genitives") are either immediately before structured/ordered adjectives (*GenS*, parameter 52, GFS) (15), or immediately after them (*GenO,* parameter 54, GFO) (16), abstracting away from the position of the noun, which may be placed in any of the available positions in, above or under the hierarchy of adjectives (according to the values of the N-movement parameters presented above).

(14) il ritratto *di* *Monna Lisa* *di* *Leonardo*
the portrait of Mona Lisa of Leonardo
del *museo* *del* *Louvre* [Italian]
of.the museum of.the Louvre
Leonardo's portrait of Mona Lisa of the Louvre Museum

(15) *John's* nice new German car

(16) to jermanikó aftokínito *tis* *Marías* [Greek]
the German car the.GEN Mary.GEN
Mary's German car

Languages with rich/robust morphological case distinctions allow a pattern in which all the aforementioned positions (GenS, GenO, and free

iteration on one side of the NP) are available for inflected genitives. In our parametric system, this property is termed "uniform genitive" (parameter 51, GUN) and is displayed in languages such as Classical Greek and Latin.

The transition from Latin to Romance and from Ancient to Modern Greek is characterized by progressive reduction of the available positions in both cases (Guardiano 2014).

In Greek, the morphological genitive was preserved but ceased to be uniform, retaining one non-iterable position, namely GenO, coupled with overt movement of N to the left of GenO and right below all adjectives (Guardiano 2003, 2011b; parameter 65, NGO, ±*Nover GenO*). The syntax of the Greek genitives, in fact, appears to be very stable: all the Greek varieties, including the Italiot ones[24], have fully retained the productive GenO pattern, which has been already operative since the *koinè*.

In Romance, the prevalent trend was from *uniform* to *prepositional/free* genitive.

Parameter	Implications	Classical Greek	Latin	Greek	Italian
± *uniform Gen*		+	+	-	-
± *Free Gen*	- *uniform Gen*	0	0	-	+
± *GenO*	- *uniform Gen*	0	0	+	-
± *N over GenO*	+ *GenO*	0	0	+	0

Figure 12. Genitives in Greek and Romance.

It has been observed (Delfitto and Paradisi 2009), however, that, besides the prepositional genitive construction, certain Romance varieties, most notably Old French, also have traces of a secondary, residual, type of genitive, with the characteristics of GenO, i.e. postadjectival (and hence postnominal), non-iterable and non-prepositional, but with restricted distribution. Silvestri (2013, 2014) showed that this genitive is present in Northern Calabrese, as well as other Extreme and Upper Southern Italian dialects, subject to several restrictions, concerning the type of head noun and the semantic relationship between the head-DP and the genitival DP: this GenO is displayed mostly within fixed nominal expressions denoting body-part names (17) and toponyms (18). In Northern Calabrese, in particular, it seems to be somehow more productive: although the head nouns belong to a lexically restricted list (kinship terms, inalienably possessed (or so perceived) items

[24] Though some prepositional genitives are sporadically attested (Katsoyannou 1996).

such as *home*, *land,* etc. (19) and container-denoting nouns (20), the speakers may employ the GenO configuration by combining the selected head noun with a genitival DP (with no special genitive morphological marking) in a less restrictive fashion, as long as the genitive DP is [+definite], [+human], and expresses inalienable possession.

(17) u fròntə a gàmma
the front the leg
shin

(18) a vàdda a Sèpa
the valley the hedge
[non-Italianized toponym]

(19) a tèrra (dàrsa) u prièvətə
the land arid the priest
[non-Italianized toponym]

(20) a cìsta (tùnna) a farìna
the basket (round) the flour
the basket (of/for) the flour

In order to distinguish this type of (residual) genitive from the fully productive GenO of Greek, we introduced a new parameter, *±partial GenO* (figure 13).

Parameter	Implications	Italiot Greek	Greek	Northern Calabrese	Sicily, S. Calabrese, Salentino, Campano	Italian
± partial Gen O		+	+	+	-	-
± GenO	*+partial GenO*	+	+	-	0	0
± Free Gen		-	-	+	+	+

Figure 13. Genitives in Southern Italy.

5.5. *Possessives*

A neat difference between (modern) Romance languages and (Modern) Greek[25] concerns the nature of pronominal "possessives". Three types of pro-

[25] Romeyka Pontic is exceptional, as shown below.

nominal possessives are encoded in Table A, based on their distribution and interpretation: *determiner*-like, *adjectival* (with a distribution similar to that of adjectives, and usually agreeing in morphology with the head noun), and *clitic*.

In Standard Greek, only *clitic* possessives are available: they are phonologically enclitic, don't exhibit adjectival agreement features, and are indeed in the genitive case. All the Greek varieties of our sample, with the exception of Romeyka (see section 6, below), display this type of possessives only.

In Romance, the two most recurrent types are the *determiner*-like and the *adjectival* ones. In Italian, only *adjectival* possessives are available. They are consistently prenominal, and, when postnominal, they have emphatic (usually contrastive) interpretation.

Southern Italian Romance varieties have *adjectival* possessives only, too. Given that in most of these dialects adjectives are consistently postnominal, we predict that adjectival possessives will also be postnominal. Such a prediction is met in Campano, Salentino and Northern Calabrese (Silvestri 2013), where possessives can only be postnominal.

In Sicily, instead, in spite of the fact that adjectives are consistently postnominal, *adjectival* possessives can be either postnominal (and fully inflected, like Italian; though, unlike Italian, they are not necessarily contrastive) or prenominal[26], with reduced morphology (no Gender/Number inflection).

(21) a. a lènti mìa
the glass my.F.S
my glasses

b. a mo lènti
the my glass
my glasses

While the difference with Italian in contrastiveness of postnominal adjectival possessives is likely to depend on the difference in the number and status of prenominal adjectives (virtually exceptional in Southern Italian dialects), the existence, in Sicily, of prenominal reduced adjectival possessives is not predictable: therefore, the addition of a new parameter, i.e. *±weak adjectival possessives*, was required.

[26] A position also frequently attested in other non-Southern Italian dialects, Manzini and Savoia (2005).

In Southern Calabrese, adjectival possessives tend to be consistently prenominal, like in Italian, though, crucially, uninflected, like in Sicily (+*weak adjectival possessives*). Postnominal ones, instead, unlike in Sicily and like in Italian, are much less frequent and always contrastively marked. Presumably, the availability, in Southern Calabrese, of an additional position for adjectives prenominally (+*fronted prenominal adjectives*) makes it superficially more similar to Italian. This triggers an assignment of information structure similar to that of Italian: the fact that both prenominal and postnominal positions are readily available for modification leads to their information structure specialization. The prenominal position will thus be unmarked for possessives, precisely as in Italian, and the postnominal one will be reserved for constrastive readings. Instead, in Sicilian, which is (-*fronted prenominal adjectives*), the prenominal and postnominal occurrences of possessives will not be mapped to distinct information structures.

Parameter	Implications	Italiot Greek	Greek	Northern Calabrese, Salentino, Campano	Sicily	Southern Calabrese	Italian
±*N over M1*		+	-	+	+	+	-
+*fr. prenom. As*	+*N over M1*	-	0	-	-	+	0
± *clitic poss on N*		+	+	-	-	-	-
± *adjectival poss.*		-	-	+	+	+	+
± *weak adj poss.*	+*adj poss* and +*N over M1*	0	0	-	+	+	0

Figure 14. Possessives and N-movement over As.

In the parametric system of Longobardi et al (2015b), prenominal adjectival possessives are assumed to be in GenS, and in Guardiano (2014) postnominal non-contrastive ones are assumed to be in GenO. If this is correct, with respect to the latter, the Romance dialects of Southern Italy fall into a *continuum* of minimal variation: Latin represents a fully productive GenO, Northern Calabrese a partially productive one, in Sicily this position is only available to adjectival possessives[27], and finally in Italian it seems to be unavailable at all. This is represented in figure 15.

[27] For residual cases of nominal GenO in Sicily, cf. Guardiano (2014).

	Latin	Northern Calabrese	Sicily	Italian
GenO	YES	NO	NO	NO
Partial GenO	YES	YES	NO	NO
Adj Poss in GenO	YES	YES	YES	NO

Figure 15. Progressive loss of GenO in Italy.

5.6. *Variable* person

A case of variation with unclear historical or areal origins/effects concerns DPs headed by non-pronominal (therefore apparently 3rd person) determiners controlling 1st/2nd person verbal agreement, a phenomenon also known as "unagreement", common in null subject languages, and possibly exclusive to a subset of *strong person* languages, such as Spanish and Standard Greek (Hurtado 1985, Ackema and Neeleman 2013, Choi 2014, Höhn 2016), see (22a). Other *strong person* languages, including Italian, do not exhibit any cases of apparent person mismatch between DPs and verb agreement (22b).

(22) a. (emís) i γlosolóji línume ta pjo dhískola provlímata
we the linguists solve.1PL the most difficult problems
we linguists solve the hardest problems

b. {*I linguisti}/{noi linguisti} risolviamo i problemi più difficili
The linguists/we linguists solve.1PL the problems most difficult
we linguists solve the hardest problems

According to Choi (2014) and Höhn (2016), the availability of unagreement is only possible in languages which allow a definite article in adnominal pronoun constructions (APCs), cf. Greek *emis *(i) γlosoloji* vs. Italian *noi (*i) linguisti* (we linguists).

Yet, some Upper and Extreme Southern Italo-Romance varieties allow unagreement even though their APCs don't have definite articles:

(23) a. nuj (*i) figghjòli iokàmu e kàrti
we the children play.1PL to.the cards
We children play cards [Southern Calabrese; Höhn e.a. to appear]

b. i figghiòli iokàmu e kàrti
the children play.1PL to.the cards
We children play cards [Southern Calabrese; Höhn e.a. to appear]

In our database, outside Sicily, unagreement is possible in Southern and Northern Calabrese, while it is ungrammatical in Salentino and Campano. In Sicily, there is a distinction between the Eastern and Central (Gallo-Italic) varieties (Ragusa and Aidone, respectively) on the one side, and the Western one (Mussomeli) on the other: indeed, while in Ragusa and Aidone sencences like (23) are accepted, in Mussomeli they seem to be ungrammatical, like in Italian. This happens to be the only difference in the varieties of Sicily, which for the rest are parametrically uniform.

All such data falsify the generalisation that unagreement implies the co-occurrence of personal pronouns and definite articles, i.e. [Pron *(Det) N]. However, the correlation is also falsified in the other direction, i.e. the availability of the [Pron *(Det) N] pattern does not necessarily entail the availability of unagreement.

As mentioned above, most Greek varieties allow unagreement (22a). Salento Greek, instead, does not (24), like Salentino Romance.

(24) a. emì jinéke ménume éssu
we women stay home
we women stay home

b. * (emì) e jinéke ménume éssu
we the women stay home
we women stay home

Given that unagreement is not a property readily derivable from the interaction of any of the extant parameters, we posit an additional parameter (±*variable person*, already sketched, with its implication with *strong person*, in Longobardi and Guardiano 2009) to capture this aspect of variation in our sample, asking whether determiners may underlyingly bear varying Person features which control verbal agreement accordingly.

Parameter	Italian	Salentino, Campano, Mussomeli	Ragusa, Aidone, Northern and Southern Calabrese	Salento Greek	Calabria Greek A and B, Cypriot Greek, Greek
±*variable person*	-	-	+	-	+

Figure 16. *Variable person*.

5.7. *Kinship terms*

In Italian, many kinship terms seem to contain an unpronounced third person possessive (25a). In Southern Italian Romance, this property is shared by the two Upper varieties (25b), while it is absent in the Extreme ones (25c). Such a difference is encoded by a specific parameter, namely ±*strong kinship possessor*, whose state is + in Italian, Campano and Northern Calabrese, - in Sicily, Southern Calabrese and Salentino.

(25) a. Gianni deve accompagnare la madre all' aeroporto
Gianni must drive the mother at.the airport
John drove his mother to the airport [Italian]

b. Gjànni ha dda akkumpagnà a mugghjèra alla stinzjùna
Gianni has to drive the wife at.the station
Gianni has to drive his wife to the station [Northern Calabrese]

c. * Gjànni ha purtàri â màtri â stazzjòni
Gianni has drive to.the mother to.the station
John has to drive his mother to the station [Ragusa]

Greek, instead, is quite uniform: all the varieties of our sample are +.

5.8. *Number on N*

In Table A, two parameters capture the presence of Number morphemes agreeing with Number on D. One (parameter 7) asks whether Number is ever spread to nouns or not (± *feature spread to N*), while the other (parameter 8) asks whether Number has robust morphological representation on nouns (± *Number on N*). A negative value for the former parameter singles out languages in which all nouns are indeclinable, e.g. Basque, even

though they manifest Number on other categories (typically determiners), while the relevance of the latter parameter becomes more obvious when one considers languages such as French, in which number distinctions are to be found in nouns, but only in a subset of them, with the majority exhibiting no phonologically visible number morphology. Only languages with robust number morphology on nouns license bare, i.e. articleless (at least plural) nominal arguments (cf. Delfitto and Schroten 1992), therefore ±*Number on N* is a parameter with important syntactic consequences. So, languages with a negative value for either ±*feature spread to N* (Basque) or ±*Number on N* (French) do not allow any bare nominal arguments.

Crucially, in our sample, apart from French, Campano also has reduced number morphology on nouns (figure 17) and, consequently, disallows bare argument nouns (26).

	Feminine	Masculine

Figure 17. Number morphology in Campano.

Singular	cas-a[28]	libbr-ə
Plural	cas-ə	

(26) a. Gjuvànnə sə mangə sempə e/assajə spaghèttə
Giovanni to.himself eat always the/many spaghetti
John always eats the/a lot of spaghetti

b. * Gjuvànnə sə mangə sempə spaghèttə
Giovanni to.himself eat always spaghetti
John always eats spaghetti

6. *The Greek-speaking world*

In this section, we discuss microvariation within the Greek group, contrasting the Greek varieties with one another. In doing so, we introduce further comparative remarks about Cypriot Greek and especially Romeyka, as the latter exhibits: (i) survival of archaic features *per se* (even more so than Mainland and Cypriot Greek do), (ii) innovations potentially attributable

[28] The only surviving original atonic final vowel in the Upper Southern varieties is reduced to schwa in specific phonotactic contexts (Loporcaro and Silvestri 2011).

to Turkic and other regional influences, and (iii) cases in which contact may have facilitated the retention of certain conservative/archaic surface patterns.

6.1. *Varying N-movement/N-finality*

The Greek varieties exhibit varying degrees of retention of the ancestral pattern with respect to noun placement. In fact, we find a three-way division: (i) Standard Greek and Cypriot Greek feature nouns preceding genitives, a pattern already present in New Testament Greek (Guardiano 2003, 2011b); (ii) the Italiot Greek varieties move the noun over most of "structured" adjectives (Guardiano and Stavrou 2014); (iii) in Romeyka nouns necessarily follow both adjectives and genitives.

Classical Greek had genitives of both types, with functional genitives being strictly prenominal (Guardiano 2003, 2011b). Hence, Romeyka apparently retains a Classical Greek pattern, though this apparent conservatism may well be the result of pressures from the surface N-finality of adstrate languages. Note, however, that Romeyka is not strictly N-final, as relatives and prepositional modifiers are postnominal (Michelioudakis and Sitaridou in prep.).

In Romeyka, the unmarked order of adjectives and genitives is such that the genitive precedes the noun but follows all adjectives (27), although the genitive may also undergo contrastive/stylistic fronting.

(27)

to	tranón	to	áskemon	t'	Alí	to	muxterón
the	big	the	ugly	the	Alis.GEN	the	cow

Ali's big ugly cow

These facts are consistent with a post-adjectival base position for genitives, Longobardi and Silvestri's (2013) GenO. In fact, the availability of GenO as the only accessible genitive is a feature that unites all contemporary Greek varieties, with variation with respect to whether it is crossed by the noun or not: it is not in Romeyka, but it is in all other Greek varieties (28).

(28) $[D\ [N_{ItGr}\ Adj^{*}\ [N_{Grk/CyG/NTG}\ GenO\ [N_{RPG/ClG}\ ...PP/Rel]]]]$

6.2. *Definiteness agreement in Romeyka and the circum-Pontic generalization*

Another case in which an ancient surface pattern is preserved, with innovation in the underlying structure, is *polydefiniteness* in adjectival modification. With the exception of Salento Greek and Calabria Greek B (Guardiano and Stavrou 2014), all other Greek varieties, both ancient and contemporary, display multiple determiners with adjectives. Calabria Greek A allows them only postnominally, Standard and Cypriot Greek both prenominally and postnominally, while Romeyka has obligatory multiple definite articles in the presence of adjectives, which are however prenominal only.

Indeed, as opposed to all other varieties, Romeyka lacks postnominal adjectives: like Standard and Cypriot Greek, the noun does not move over structured adjectives and, unlike the rest of Greek, Romeyka lacks postnominal adjectives interpreted as free reduced relatives (parameter 41, ARR, *±free reduced relatives*).

Notably, given that free reduced relatives, which are introduced by definite articles in Standard and Cypriot Greek, are arguably the source of prenominal articulated/polydefinite adjectival modification (i.e. the position of the former is arguably the base position of the latter), it follows that the syntax of polydefinite adjectival modification in Romeyka cannot be that of Standard or Cypriot Greek, as Romeyka lacks free reduced relatives.

Furthermore, the obligatoriness of multiple articles on all [+N] elements DP-internally suggests that some process of obligatory spread/agreement is at play. Therefore, it seems reasonable to treat apparent definite articles in Romeyka as definiteness agreement bound morphemes, prefixed to a [+N] element in such a way that nothing can interrupt this sequence (like, possibly, in Hebrew and Arabic, rather than suffixed as in Romanian, Bulgarian, Scandinavian). While an indefinite DP can feature just an indefinite determiner in D, satisfying the *+strong article* (parameter 12, CGR) requirement of the language, in definite DPs, definiteness is obligatorily spread from D to all [+N] heads and arguably no overt definite morpheme is in D^0, as all articles are prefixes in [+N] heads below D. However, recall that, like all the other contemporary Greek varieties, Romeyka has a positive setting for *±strong person* and for *±strong article*. Either of the two parameters require overt filling of a definite D (cf. Bulgarian and Semitic for the former and English for the latter), and *a fortiori* when both are set to a positive value, as in Romeyka. Therefore this requirement for an overtly filled definite D must

be satisfied through phrasal movement of the highest XP, e.g. an AP, a genitive DP or even the NP itself, to Spec-D.

So, despite retaining the property of being able to host more than one definiteness marker in one DP, Romeyka has also developed an affixed definite article of the sort found in Bulgarian and Romanian, though proclitic rather than enclitic. This claim is reinforced by the fact that the definite article when declined shows phonological reduction in comparison to Standard Greek.

This seems to be an areal feature of all languages around the Black Sea that happen to have articles. Interestingly, there are, at least, two non-Indo-European languages spoken in the Black Sea area that have clitic articles, namely Abkhaz (Hewitt 1979) and Kabardian (Colarusso 1992). Both languages belong to the North West Caucasian language family and have clitic definite articles, though they differ in the positioning of these morphemes: Abkhaz has a definite prefix, whereas Kabardian has a definite suffix. Finally, there was another recently extinct North West Caucasian language, Ubykh, that had a definite prefix (Kumakhov 1998). Thus, the generalization that arises would be as follows (29):

(29) *Circum-Pontic generalization*. In languages around the Black Sea, if articles are available at all, then definite articles are only clitic (bound morphemes).

In these languages, when combined, the two properties multiple definiteness (+*definiteness on all*) and clitic-like article (+*article-checking N*, parameter 15, DCN), give rise to generalized *polydefiniteness*/determiner spreading of the sort also found in Semitic.

As a last remark, the loss of free reduced relatives in Romeyka may also be attributed to the influence/interference of the predominantly N-final patterns, to which the speakers are exposed in contact situations.

6.3. *Adjective fronting*

With the exception of the Italiot ones, all other Greek varieties allow fronting, i.e. emphatic and stylistic raising to a pre-D position, of certain XPs, including dertermined APs. Thus, they retain some of the discontinuity allowed within the DP in the Classical languages, Classical Greek and Latin (see also Mathieu and Sitaridou 2002, 2005). Even the Romance vari-

eties allow genitive fronting in certain contexts, especially indefinites (30), so the Greek varieties are special in extending this possibility to APs (in *polydefinite* constructions) (31).

(30) a. ho letto DI CHOMSKY un libro (non di Kant)
have read of Chomsky a book (not of Kant)
I read a book by Chomsky, not by Kant

b. *ho letto nuovo un libro (non vecchio)
have read new a book (not old)
I read a new book, not an old one

(31) a. o kókinon *(t') arápa [Romeyka]
to kókino to aftokínito [Greek]
the red the car
the red car

b. *kókino to aftokínito [Greek]
red the car
the red car

c. *kókino éna aftokínito [Greek]
red a car
a red car

This frontability further correlates with the extractability of these XPs from the DP (Mathieu and Sitaridou 2005, Bošković 2008). The facts seem to suggest a consequential hypothesis that can only be presented sketchily here: in all the languages in question, fronting (and ultimately extraction, Giorgi and Longobardi 1991, ch.2) is only possible for NP-internal XPs that need not satisfy agreement requirements beyond the limits of the fronted phrase itself (i.e. through a trace) but can do so within it. This makes the correct distinction between fronting of genitives and fronting of undetermined adjectives ((30)a vs. b), and crucially between fronting of determined and of undetermined adjectives ((31)a vs. b,c).

Therefore, the frontability of APs in Greek is the by-product of the availability of polydefiniteness, i.e. of APs containing definite morphemes with phi-features; instead, in Latin, which lacked overt definiteness morphology, the relevant agreement requirement could have been satisfied more abstractly, i.e. through a null D category, independently motivated, arguably,

at least by the occurrence of bare definite (as well as indefinite[29]) argument nominals.

In Romance, which has developed definite determiners (*+grammaticalized article*, parameter 11, DGR) but, unlike Greek, does not allow them AP-internally (*-definiteness on all*), agreement requirements of adjectives cannot be satisfied AP-internally and their frontability has consequently been lost[30]. The hypothesis has interesting ramifications in the syntax of Slavic languages, which, however, are beyond the scope of the present article.

In the case of Italiot Greek, it seems reasonable to assume that (a) in Salento Greek it is the loss of *polydefiniteness* that had the concomitant effect of loss of AP-fronting, while (b) in Calabria Greek A, the use of the polydefinite construction even for ordered APs, crossed by the moving N, i.e. not free reduced relatives, had as a result the dissociation of definite APs from the source/base position of AP-fronting. As such, even though AP-frontability and the lack thereof are indeed a measure of conservatism in the Greek group and the Romance group respectively, with respect to their ancestral states, the differences need not be represented as differences with respect to one specific parameter, but are already independently captured in our system in terms of stable or changing values for the above-mentioned interacting parameters (namely, parameters with clusterings crucial for determining AP-internal satisfaction of agreement features, i.e. *+/-definiteness on all ([+N] categories)*, *+/-N over Adjectives*, *+/-grammaticalized article*).

[29] Note that, if we extend this to indefinites, the question arises whether null indefinite singular count D allows adjective fronting too, in e.g. languages such as Ancient Greek, Celtic, Hebrew, Icelandic and Bulgarian. This is an ultimately empirical question which we do not explore here.

[30] R. Kayne (p.c.) asks why postnominal superlatives in French, which have an obligatory extra article, cannot be fronted. Note that fronted APs arguably move from a position other than the one of ordered/structured (in our terms) adjectives, most probably a postnominal position available to free reduced relatives. Once N-movement over adjectives emerges in the history of a language and extra articles are (also) available for structured APs, then multiple articles within a single DP cease to be a cue for AP-frontability. The parametric change which gave rise to N-movement over As is for instance what led to the loss of AP-frontability in Calabria Greek A. Therefore, multiplicity of definite articles is a necessary condition for AP-fronting but not a sufficient one. A negative setting for [±N over A] is another necessary condition and this explains the non-frontability of articulated superlatives in French. Furthermore, on Kayne's (2008) analysis of the French case, the extra article is only overt as a result of a parametric setting that licenses the (non-)pronunciation of a definite D, when Spec-D is filled, therefore what is overt in French is covert in Italian (which also correlates with (non-)pronunciation of the definite article with bare mass nouns and plurals) and not necessarily there to satisfy any agreement requirements of the AP, as in Greek.

Parameters	Implications	Latin	Romance	Ancient and Modern Greek	Romeyka	Salento Greek	Calabria Greek
±*gramm. article*		-	+	+	+	+	+
±*def. on all*	+*gramm. art.*	0	-	+	+	-	+
±*N over As*		-	+	-	-	+	+
→*A-frontability*		YES	NO	YES	YES	NO	NO

Figure 18. Deriving AP frontability in Greek and Romance.

6.4. *Adjectival possessives in Romeyka*

As remarked above, most contemporary Greek varieties express pronominal possessives as pronominal clitics (parameter 71, NCL, ±*clitic possessives on N*). In Ancient Greek (Guardiano 2003), instead, both *adjectival* (parameter 72, ±*adjectival possessives*) and *clitic* possessives were available (figure 19). A clear case of retention of an ancient property in Romeyka is the presence of *adjectival* possessives.

In Romeyka, possessives have the distribution of high adjectives: the presence of *adjectival* possessives seems therefore to represent a clear case of retention, in this language, of an ancient property. Yet, contrary to Ancient Greek, in Romeyka adjectival possessives appear in a default, apparently neuter, form.

More in details, Romeyka possessives morphologically comprise the Ancient Greek form of the adjectival pronominal possessive, normally taking a /t-/ prefix, which is arguably the contracted form of the (neuter) definite article (32)[31]. Note that Romeyka features obligatory definiteness agreement, which rendered this prefix part of the word, both necessary and invariant (given the default gender morphology of adjectival possessives).

(32) t-emón t' arápa
the-my the car
my car

The distribution of pronominal possessives in the Ancient and Modern Greek varieties of our sample is summarized in figure 19.

[31] According to Michelioudakis and Sitaridou (in prep), the drop of the vowel of the article follows the same rules as in the vowel reduction, in similar contexts, of pronominal clitics (but not articles) in Standard Greek (Holton, Mackridge and Philippaki-Warburton 1997).

Parameters	Implications	Classical	New Testament	Greek	Cypriot	Italiot	Romeyka
± *clitic poss on N*		+	+	+	+	+	+
± *adjectival poss*		+	+	-	-	-	+
± *enclitic poss on As*	*-adj poss*[32]	0	0	+	+	+	0

Figure 19. Possessives in Greek.

6.5. *The* consistency principle *and its exceptions*

A parametric difference between Standard and Cypriot Greek concerns the availability of a high register pattern in prenominal adjectival modification in Standard Greek, but not in Cypriot. Standard Greek allows pre-N APs which are head-initial, i.e. adjectives followed by a prepositional argument. Such head-initial APs in superficially prenominal positions give rise to inconsistencies with respect to head directionality.

Crosslinguistically, there appears to be a bias against such orders, and indeed Cypriot Greek disallows them, resorting to post-N adjectives (i.e. free reduced relatives), when they take a prepositional complement, essentially as in English.

(33) a. éna jemáto me lekéδes fustáni [Greek]
a full with stains dress
a dress full of stains

b. i. * énan jemáton me fcóra fustánin [Cypriot Greek]
a full with flowers dress
a dress full of flower patterns

ii. énan fustánin jemáton me fcóra
a dress full with flowers
a dress full of flower patterns

The difference between Cypriot and Standard Greek is captured by their opposite values for parameter 70, ACP (±*consistency principle*), which also captures variation widely attested crosslinguistically, beyond our sample.

[32] In the varieties that have both adjectival and clitic possessives, clitics may only attach to nouns, while in those that lack adjectival possessives, clitics may even associate with higher positions and attach to adjectives. The implication captures precisely such a difference.

In all other respects, Standard and Cypriot Greek display the same parameter settings; furthermore, none of the additional parameters of microvariation seem to be required by the their comparison.

In sum, all the aspects of variation considered in this section are captured by each variety's settings for the parameters already in use for large scale comparisons (Table A, figure 2). As already said, this indeed matches the degree of diversification among the Greek varieties considered here, which considerably exceeds the one of the Southern Italian dialects.

7. *History and geography of syntax*

7.1. *Table A+*

The discussion in section 5 made it clear that the accuracy of crossdialectal comparison and grouping heavily depends on finer-grained parametric distinctions.

The table resulting from introducing the 8 newly-formulated parameters is presented below (figure 20), along with the corresponding distance matrix (figure 21).

7.2. *Taxonomic experiments*

Having established that syntax can capture/reflect historical processes of diversification/continuity/(or even) convergence, it remains to be seen if the system is such that the distances computed can translate into a reasonable phylogeny, successfully distinguishing vertical from horizontal processes.

The Kitsch tree reproduced in figure 22, built using the parametric distances of figure 21, indeed shows very good results.

It improves on the conclusions of the tree calculated from Table A (figure 3): the Greek and Romance families are unambiguously identified as separate, and the internal classification of both does not seem to be obscured by effects of horizontal transmission.

Indeed, in spite of plausible Romance and Turkic influence in Southern Italy and Pontus, respectively, both Italiot Greek and Romeyka now cluster with Greek, with Romeyka expectedly being the outlier of the group.

	TABLE A+		RGS	MsS	AdS	SCa	Sal	NCa	Cam	It	Sp	Fr	Ptg	Rm	Lat	CIG	NTG	SaG	CGA	CGB	Grk	RPG	CyG	Tur		
1	± gramm. morphology	FGM	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGM	1
2	± gramm. person +FGM	FGP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGP	2
3	± gramm. number +FGP	FGN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FGN	3
4	± gramm. collective ¬+FGN	GCO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GCO	4
5	± gramm. gender +FGP	FGG	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FGG	5
6	± NP over D +FGP	NOD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOD	6
7	± feature spread to N +FGN or +GCO, -NOD	FSN	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	FSN	7
8	± numb. on N +FSN	FNN	+	+	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	FNN	8
9	± gramm. boundedness	CGB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	CGB	9
10	± free incorporation +CGB	FIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	FIN	10
11	± gramm. article +FGP	DGR	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	DGR	11
12	± strong article -CGB, +DGR, ¬-FNN	CGR	+	+	+	+	+	+	0	+	+	0	+	+	0	-	-	+	+	+	+	+	+	0	CGR	12
13	± strong person (+FGN, ¬+FSN) or +DGR	NSD	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+	+	+	+	+	0	NSD	13
14	± free null partitive Q +FNN, ¬+CGB	DPQ	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	DPQ	14
15	± article-checking N (+FGN, ¬+FSN) or +DGR	DCN	-	-	-	-	-	-	-	-	-	-	-	+	0	-	-	-	-	-	-	+	-	0	DCN	15
16	± def on relatives +DGR	DOR	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0	DOR	16
17	± D-controlled infl. on N +FSN	DIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIN	17
18	± plural spread from cardinals +FSN, ¬+GCO	CPS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	CPS	18
19	± numerical (partial) atomizer +FGN, +CGB	NPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	NPA	19
20	± atomizer +NPA, -DGR	BAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	BAT	20
21	± gramm. classifier ¬+BAT	FGC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FGC	21
22	± gramm. bare classifier +FGC	GBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GBC	22
23	± indefinite bare classifier +GBC	IBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IBC	23
24	± boundedness-checking N +NPA	CCN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	CCN	24
25	± null-N-licensing art -DCN, +NSD	DNN	-	-	-	-	-	-	-	-	+	-	+	0	0	+	+	-	-	-	-	0	-	0	DNN	25
26	± gramm. temporality	FGT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FGT	26
27	± gramm. text anaphora ¬+DGR	DGP	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	-	DGP	27
28	± clitic *location* +BAT	TCL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TCL	28
29	± strong partial *location* ¬+TCL	TPL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	TPL	29
30	± strong *location* +TPL	TSL	+	+	+	+	+	+	+	+	-	+	+	-	-	-	-	+	+	+	-	+	-	+	TSL	30
31	± adjectival *location* -TPL or -TSL	TAD	0	0	0	0	0	0	0	0	+	0	0	+	+	+	+	0	0	0	+	0	+	0	TAD	31
32	± D-checking *location* (+FGN, ¬+FSN) or +DGR, +TPL or (-CGR, +TAD)	TSP	+	+	+	+	+	+	+	+	+	+	+	+	0	-	-	+	-	+	-	-	-	0	TSP	32
33	± Double *location* +TPL	TDL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TDL	33
34	± NP-heading modifier	HMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HMP	34
35	± structured APs	AST	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	AST	35
36	± feature spread to struct. APs +FSN, +AST	FFS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FFS	36
37	± feature spread to pred. APs +FGN or +GCO	FSP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	FSP	37
38	± D-controlled infl. on A -NSD, +FFS	ADI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	ADI	38
39	± NP over obliques	ADR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	ADR	39
40	± relative extrap. -ADR	AER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	AER	40
41	± free reduced rel +AST	ARR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	ARR	41
42	± N-raising with obl. pied-piping +AST	NPP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NPP	42
43	± N over cardinals	NOC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOC	43
44	± N over ordinals -NOC	NOO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOO	44
45	± N over M1 As -NOO, -NPP	NM1	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	NM1	45
46	± N over M2 As -NM1	NM2	0	0	0	0	0	0	0	+	+	+	+	+	-	-	-	0	0	0	-	-	-	-	NM2	46
47	± N over As -NM2	NOA	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	-	-	-	NOA	47
48	± Poss"-checking N	GCN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	GCN	48
49	± Gen-feature spread to N +FGP, +GCN	GFN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	GFN	49
50	± Acc-licensing N	GAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	GAL	50
51	± uniform Gen ¬+GFN	GUN	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	0	GUN	51
52	± GenS ¬+NSD, -GUN	GFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GFS	52
53	± free Gen -GUN	GFR	+	+	+	+	+	+	+	+	+	+	+	+	0	0	-	-	-	-	-	-	-	0	GFR	53
54	± GenO ¬+GUN, -GAL or ¬+GFN	GFO	-	-	-	-	-	-	-	-	-	-	-	-	0	0	+	+	+	+	+	+	+	0	GFO	54
55	± prepositional arguments +ADR	GPR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	GPR	55
56	± gramm. generalized linker	EZ1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ1	56
57	± gramm. non-clausal linker -EZ1	EZ2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ2	57
58	± gramm. arg. linker ¬ +EZ1 ,¬+EZ2	EZ3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EZ3	58
59	± phi-licensed poss. +DCN	DMP	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	-	0	0	DMP	59
60	± phi-licensed Gen +DMP	DMG	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	DMG	60
61	± head Genitive iteration +GCN or +DMG, -EZ2	HGI	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	-	HGI	61
62	± obligatory inalienable Genitive	GSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GSI	62
63	± obligatory Genitive +GSI	GST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	GST	63
64	± Genitive inversion +GFN	GEI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	GEI	64
65	± N over GenO ((¬-GFO, -GAL or ¬+GFN) or +PGO), -NOA or -AST	NGO	0	0	0	0	0	0	0	0	0	0	0	0	-	-	+	0	0	0	+	-	+	0	NGO	65
66	± N over ext. arg. -NGO or (¬+GFO, -NOA or -AST)	NOE	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	0	0	+	0	+	NOE	66
67	± free MOD +AST, +NGO	AFM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	+	0	AFM	67
68	± class MOD -AFM	ACM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	ACM	68
69	± def on all (+NSD, (+ARR or +DCN or +AFM or +ACM)) or (+DCN, +CGR)	DOA	-	-	-	-	-	-	-	-	-	-	-	0	+	+	-	+	-	+	+	+	0		DOA	69
70	± Cons. Pr. +AST, (-NM1,+ADR) or (+NPP or ¬-NM2, -ADR)	ACP	0	0	0	0	0	0	0	+	+	+	+	+	-	-	-	0	0	0	-	+	+	0	ACP	70
71	± clitic poss. on N	NCL	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-		NCL	71
72	± adjectival poss. ¬+ GFN	APO	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	-	-	-	+	-	0	APO	72
73	± adjectival Gen +APO	AGE	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	0	0	0	0	-	0	0	AGE	73
74	± D checking poss. +DGR, +NSD or ¬+CGR, ¬+GFN	PDC	-	-	-	-	-	-	-	+	+	+	-	0	-	-	-	-	-	-	-	-	-	0	PDC	74
75	± enclitic poss. on adj. +AST, -APO, ¬+DGR or -PDC, ¬+DMP	ACL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	+	0	+	0	ACL	75
76	± grammaticalized *location* reinforcer	TDD	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	TDD	76
77	± fronted prenominal As +NM1	EM1	-	-	-	+	-	-	-	0	0	0	0	0	0	0	0	-	-	-	0	0	0	0	EM1	77
78	± partial GenO -GFO	PGO	-	-	-	-	+	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	PGO	78
79	± *weak* adjectival poss. +NM1, +APO, -PDC	AGS	+	+	+	+	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AGS	79
80	± gramm. partial expl. art (+NSD, ¬-NOA) or -NSD	DPN	-	-	-	+	-	-	-	-	-	-	-	0	0	0	+	+	+	0	0	0	0	0	DPN	80
81	± gr. expl art +DPN	NTD	0	0	0	-	0	0	0	0	0	0	0	0	0	0	+	+	+	0	0	0	0	0	NTD	81
82	± poss. checking D - GSI	OKP	-	-	-	-	+	+	+	-	+	?	-	+	-	-	-	-	-	-	-	-	-	?	OKP	82
83	± variable person +FGP, +NSD	FVP	+	-	+	-	+	-	-	+	-	-	-	0	+	+	-	+	+	+	+	+	+	0	FVP	83
	TABLE A		RGS	MsS	AdS	SCa	Sal	NCa	Cam	It	Sp	Fr	Ptg	Rm	Lat	CIG	NTG	SaG	CGA	CGB	Grk	RPG	CyG	Tur		

Figure 20. Table A+

	RGS	MsS	AdS	SCa	Sal	NCa	Cam	It	Sp	Fr	Ptg	Rm	Lat	ClG	NTG	SaG	CGA	CGB	Grk	RPG	CyG	Tur
RGS	0.0000																					
MsS	0.0182	0.0000																				
AdS	0.0000	0.0182	0.0000																			
SCa	0.0182	0.0364	0.0182	0.0000																		
Sal	0.0545	0.0364	0.0545	0.0727	0.0000																	
NCa	0.0545	0.0727	0.0545	0.0727	0.0727	0.0000																
Cam	0.0755	0.0566	0.0755	0.0943	0.0566	0.0566	0.0000															
It	0.0566	0.0377	0.0566	0.0566	0.0566	0.0566	0.0392	0.0000														
Sp	0.0755	0.0943	0.0755	0.0755	0.1132	0.1132	0.1373	0.0909	0.0000													
Fr	0.1176	0.0980	0.1176	0.1176	0.1176	0.1176	0.0588	0.0566	0.1132	0.0000												
Ptg	0.0769	0.0577	0.0769	0.0769	0.0769	0.0962	0.0800	0.0370	0.0370	0.0577	0.0000											
Rm	0.0980	0.0784	0.0980	0.0980	0.0980	0.1373	0.1224	0.0755	0.0741	0.1373	0.0769	0.0000										
Lat	0.1250	0.1250	0.1250	0.1250	0.1250	0.1000	0.1282	0.1190	0.1163	0.1707	0.1220	0.1429	0.0000									
ClG	0.1633	0.1837	0.1633	0.1633	0.1837	0.1837	0.2128	0.2157	0.1538	0.2653	0.2000	0.2000	0.0652	0.0000								
NTG	0.1765	0.1961	0.1765	0.1765	0.1961	0.1961	0.2245	0.2264	0.1667	0.2745	0.2115	0.2115	0.1111	0.0370	0.0000							
SaG	0.1154	0.0962	0.1154	0.1346	0.0943	0.1346	0.1400	0.1373	0.1961	0.2041	0.1600	0.1400	0.1795	0.1875	0.1600	0.0000						
CGA	0.1346	0.1538	0.1346	0.1538	0.1509	0.1538	0.2000	0.1961	0.2157	0.2653	0.2200	0.2000	0.1795	0.1250	0.1000	0.0556	0.0000					
CGB	0.0962	0.1154	0.0962	0.1154	0.1132	0.1154	0.1600	0.1569	0.1765	0.2245	0.1800	0.1600	0.1795	0.1667	0.1400	0.0185	0.0370	0.0000				
Grk	0.1600	0.1800	0.1600	0.1600	0.1800	0.1800	0.2292	0.2115	0.1887	0.2800	0.2353	0.1731	0.1364	0.0943	0.0536	0.0980	0.0392	0.0784	0.0000			
RPG	0.1600	0.1800	0.1600	0.1600	0.1800	0.1800	0.2292	0.1923	0.1923	0.2600	0.1961	0.2115	0.1556	0.1132	0.1111	0.1429	0.0816	0.1224	0.1132	0.0000		
CyG	0.1600	0.1800	0.1600	0.1600	0.1800	0.1800	0.2292	0.1923	0.1698	0.2600	0.2157	0.1538	0.1591	0.1132	0.0714	0.0980	0.0392	0.0784	0.0175	0.0943	0.0000	
Tur	0.3235	0.3235	0.3235	0.3235	0.3235	0.3235	0.3529	0.3143	0.3429	0.3714	0.3143	0.3611	0.2632	0.3243	0.3333	0.3529	0.3529	0.3529	0.3333	0.2703	0.3333	0.0000

Figure 21. Distances from Table A+

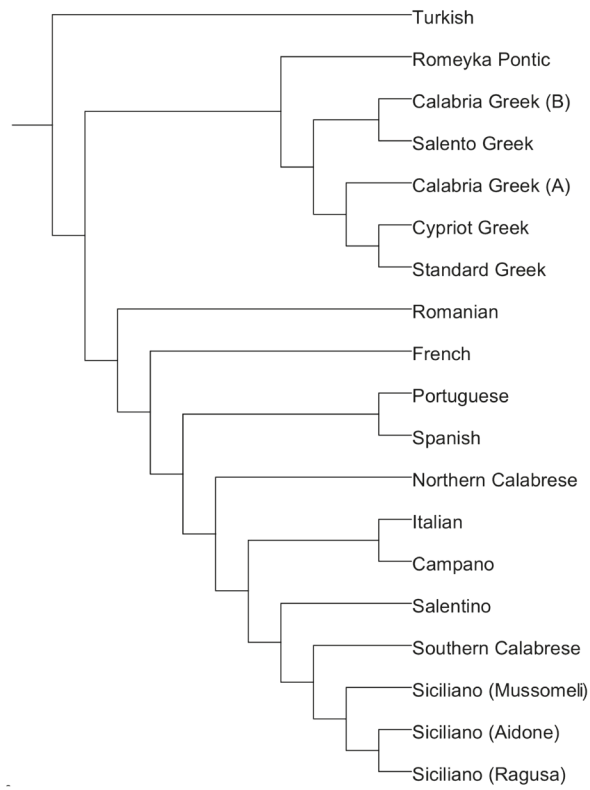

Figure 22. KITSCH tree from Table A+

Furthermore, contrary to the previous experiment, the Italo-Romance-internal classification groups the varieties of Sicily together, and successfully recognizes an Extreme Southern Unity. Unsurprisingly, the two Upper Southern varieties do not fall together: Campano clusters with Italian, and Northern Calabrese is the outlier of the whole Italo-Romance group, outside the cluster of Extreme and Upper Southern varieties. This presumably reflects the condition of isolation of Northern Calabrese, as the only representative of the "Lausberg area" in our sample, which, as noted, shares phonological isoglosses with other plausible outliers of the Italo-Romance group, such as Sardinian.

As far as the internal articulation of the Greek group is concerned, again, the two varieties most likely to be affected by contact with Romance,

Salento Greek and Calabria Greek B, fall together, while the most isolated and conservative one, Calabria Greek A, groups with Cypriot and Standard Greek. Importantly, the addition of parameters which happen to have identical values across all Greek varieties reinstates even Romeyka.

The network represented in figure 23 results from a bootstrapping experiment that automatically selects a random sample of the whole set of parameters and draws the corresponding tree. The experiment has been re-run 1000 times and the results are summarized in the SplitsTree (Huson and Bayaut 2006) network in figure 23, that represents multiple trees in one and the same graph, drawing several reticulates where a branch is not consistently present in the trees (i.e. where the phylogenetic signal is not clear).

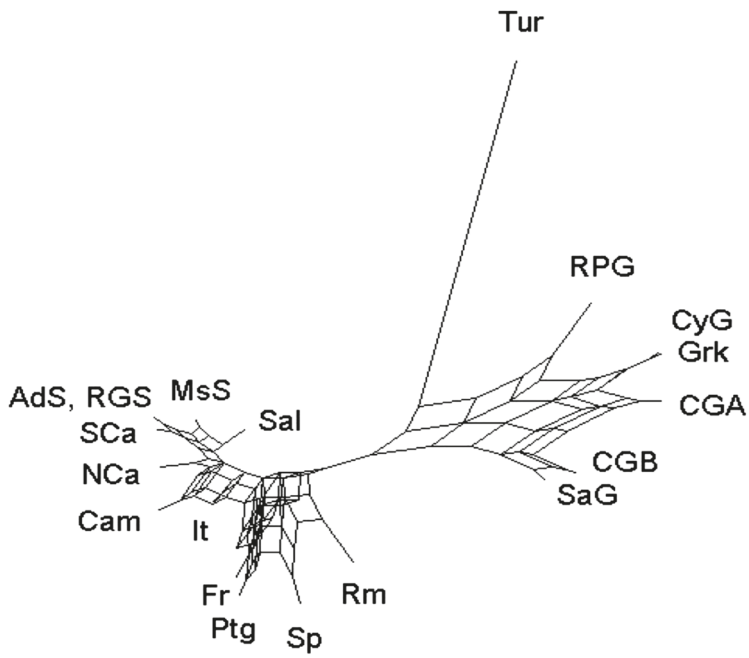

Figure 23. SplitsTree network from Table A+ after a 1000-bootstrapping experiment.

In the network, Turkish is clearly separated from Indo-European; its closest neighbor is, unsurprisingly, Romeyka: the few branches that connect them to one another represent plausible areal effects. The two Indo-European branches (Greek and Romance), in turn, are clearly separated. Within the two clades, some reticulation is visible, and it is particularly intricate in

Romance (a signal of uncertainty in sub-classification). The internal classification of the two groups is largely correct. Within Romance, all the Extreme Southern dialects are clustered together, and the Italian group is separated from the rest of Romance, with Italian bridging the two. As far as Greek is concerned, Romeyka is the most isolated (and closest to Turkish), Salento Greek and Calabria Greek B fall together and tend to be slightly attracted by Romance, again reflecting potential areal convergence; Calabria Greek A, instead, falls between the latter pair and the one formed by Cypriot and Standard Greek, this positioning reflecting its more conservative nature.

Figure 24 results from a Principal Component Analysis (PCA[33]): the relationships observed in previous experiments are all confirmed. Turkish is clearly separated from Indo-European and, like in the network, Romeyka is the only Indo-European variety that shows up to the left of the vertical axis of variation. Within Indo-European, the horizontal axis separates Romance from Greek. In the latter, Salento Greek and Calabria Greek B are the varieties closest to Romance, while Calabria Greek A lies next to Cypriot and Standard Greek, consistently with all other experiments.

In order to obtain a higher resolution, we removed Turkish: the result is shown in figure 25. Here, Romance and Greek are neatly separated from one another by the vertical axis of variation. Calabria Greek (A) falls once again between the "Mainland" varieties and the Italiot ones, which in turn are closer to Romance, like in the network.

7.3. *Does dialect syntax carry a historical signal?*

In the above discussion, we showed that pairs of independently (diachronically, geographically, sociolinguistically) distant languages and pairs of independently close languages differ with respect to different sizes and sorts of syntactic properties: this reflects the fact that not all parameters have the same stability, and therefore different parametric changes can non-accidentally trace splits of different historical depth. Furthermore, if syntax is to carry any relevant historical signal, then in cases where we have lexical, geographical and other pieces of evidence for historical closeness between certain varieties, the syntactic distance found between them must be expected to proportionally reflect such a degree of closeness.

[33] The PCA is a data visualization method which identifies the main trends of variation of a character matrix (usually two) and plots them on a graph (usually, bi-dimensional). The amount of variation represented is given by the combination of the percentages associated to each axis of variation.

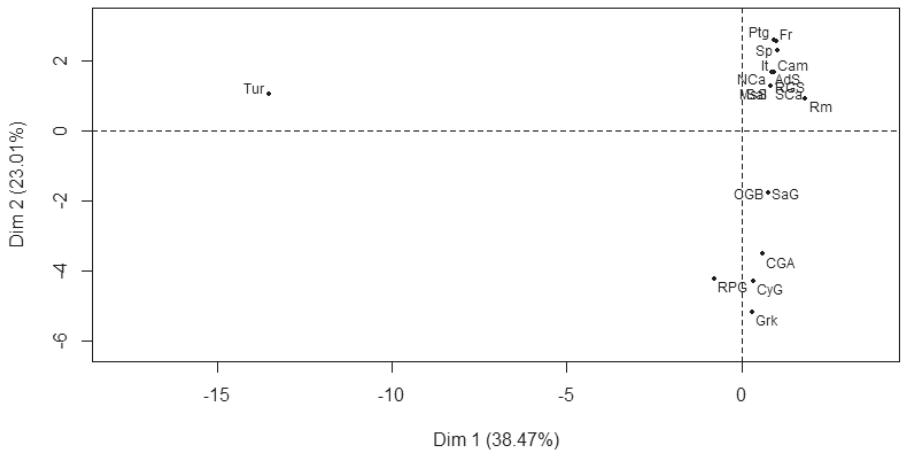

Figure 24. Principal Component Analysis from Table A+.

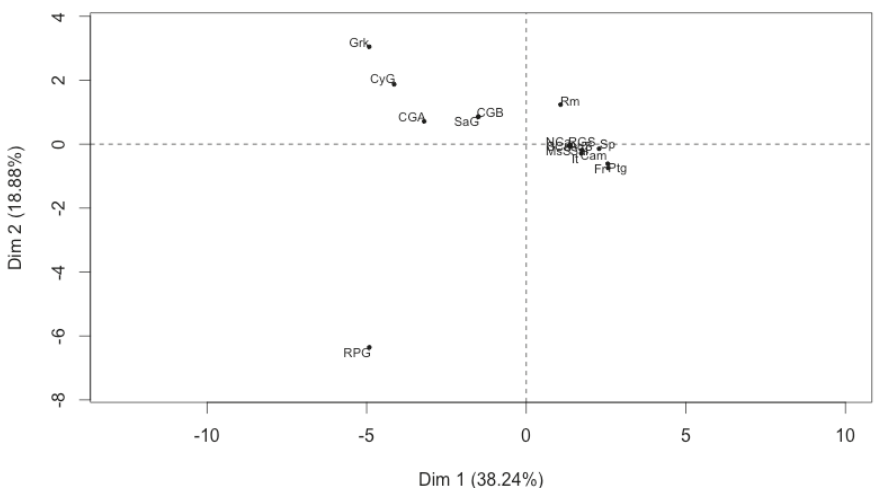

Figure 25. Principal Component Analysis of TableA+ (Turkish removed).

The expectation is met: when we focus more narrowly on closer varieties, such as the dialects of Southern Italy, we do find the necessity for additional and more fine-grained differences in order to preserve the resolution of the method. This represents a further argument that syntax carries a signal comparable to that traditionally attributed to other linguistic and cultural variables.

At this point, we can analyze some historical generalizations retrieved by this application of the PCM in more detail.

7.4. *Conservatism and diversification in the Greek varieties*

Figure 26 represents a PCA that includes the three ancient varieties of Table A+: Classical Latin (Lat), Classical Attic (ClG) and New Testament *koinè* (NTG).

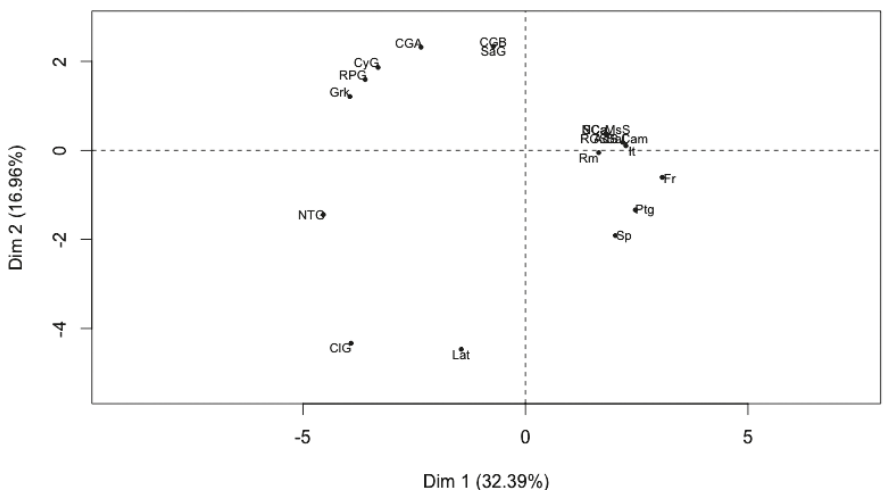

Figure 26. Principal Component Analysis from TableA+ including ancient varieties (Turkish removed).

From this figure, complemented by the more selective ones 27 and 28 below, it can be suspected that the degree of diversity of Greek varieties, when the two Italiot and Pontic colonial areas are included, in spite of no wider geographic dispersion, is even higher in scale than that between the most outlying Romance languages. Thus, the Greek varieties display more salient internal parametric diversification than Romance; however, at the same time, at least non-Italiot Greek provides a stronger impression of closeness (conservatism) with respect to its presumable direct ancestor (*koinè* Greek) than Romance with respect to Latin.

By inspecting the pairwise distances in figure 21 we can confirm, or minimally revise, these impressions: first, including Romeyka and Salento Greek, the Greek family does indeed exceed in one case the maximum distance attested among modern Romance varieties (e.g. Romanian-French 0.1373);

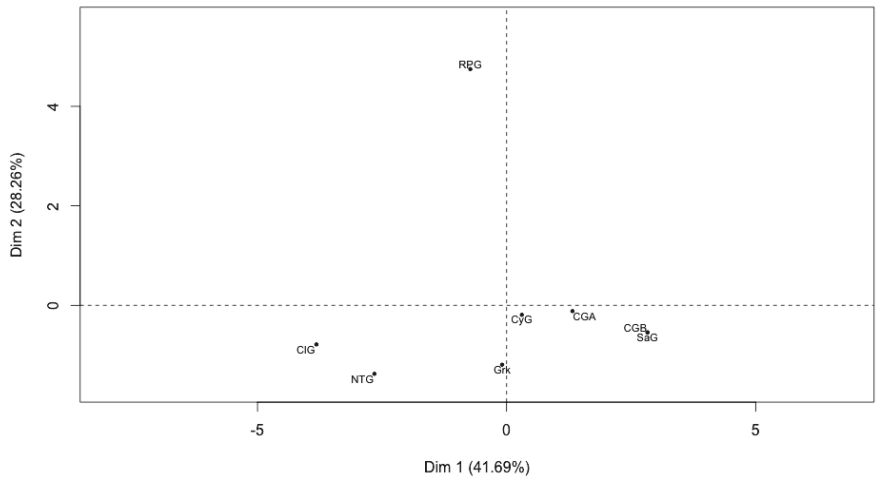

Figure 27. Principal Component Analysis from TableA+. Greek varieties only.

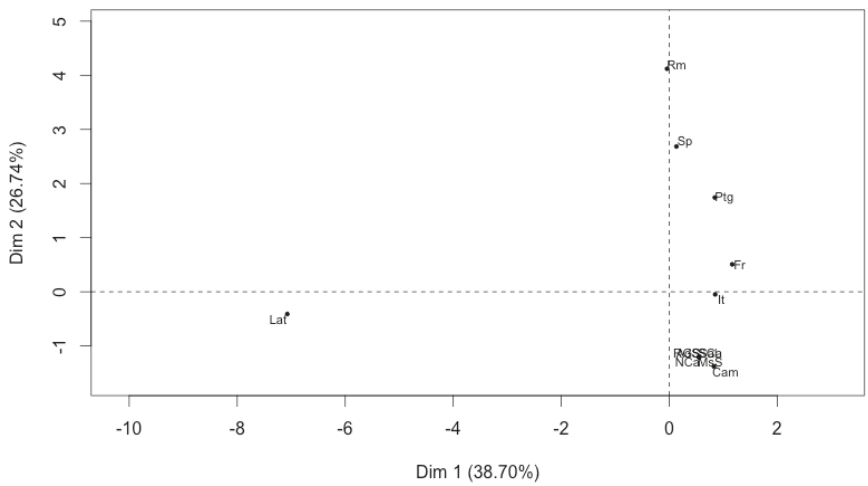

Figure 28. Principal Component Analysis from TableA+. Latin and Romance languages only.

second, the distance between Standard Greek and New Testament *koinè* (0.0536) is indeed lower than that between Latin and any modern Romance variety, significantly lower than the highest of the latter (Latin-French 0.1707), and this comes close to also holding for the other non-Italiot varieties.

These two partly contradictory conclusions (diversity and conservatism) can perhaps be reconciled noting that indeed both diversity and innovative-

ness especially or exclusively concern the two Italiot varieties most affected by Romance interference: Salento Greek and Calabria Greek B.

As for conservatism, it is also worth stressing some original difference with Romance (Longobardi 2012) appearing only when one steps further down, from distances to the level of direct parametric analysis: Romance nominal syntax seems to have remarkably evolved from the Latin one, although with several parallel developments in the modern languages. Such developments cannot be regarded as accidental, but as the shared cascade effect of certain "pre-existing conditions" of Latin nominal syntax, once the single parametric change leading to the rise of grammaticalized articles took place and made several previously irrelevant parameters become settable. The result is precisely a nominal syntax that is both particularly compact across modern Romance but remarkably different from the Latin one. Given that in Greek the article was already grammaticalized long before Hellenistic *koinè*, we do not predict to find the analogous situation (and the same source for almost "catastrophic" change: Lightfoot 1999), and we may perfectly expect a less catastrophic evolutionary model, one with more sustained and overall regular divergence (it is not affected by converging parameter settings). It is interesting to note that, owing to the implicational structure of Universal Grammar parameters, a potentially catastrophic change has been indeed likely to provide robust vertical restructuring (from Latin to modern Romance) but, increased similarity within the resulting family; Greek would instead result from a more continuous evolution. Of course, the two abovementioned Italiot Greek dialects blur the picture, given their described contact with Romance.

Now, one can try to single out the parameters most responsible for the diversification among the Greek varieties. They seem to be, in the first place, those governing N-movement, *determiner*-like properties of demonstratives, and the loss of *polydefiniteness*, all separating the currently spoken Italiot varieties from the rest of Greek (including the more conservative variety of Calabria Greek A)[34].

Adding Romeyka to the picture, there is an (even larger) number of parameters (and resulting surface patterns) which differentiate it more strongly from the rest. At the same time, there is also a significant number of parameter values that keep it significantly more conservative (as it also emerges from

[34] Concerning the striking contrast between the distance of Italiot from Mainland Greek and that of Mainland Greek from Cypriot, it seems reasonable to connect it to the time depth of separation or the conditions of isolation of the two cases, though assessing the relative contribution of either factor is beyond the scope of the present study.

its position in the PCA), e.g. *adjectival* possessives, prenominal genitive, as well as innovations also due to the influence of surface patterns the language was exposed to through its contact(s), e.g. the loss of free-reduced relatives.

Also, the interaction of certain parameters, that are relatively stable in Standard, Cypriot and Pontic Greek, gives rise to properties that render them as a whole more conservative and closer to Ancient Greek, e.g. the retention of some possibility of fronting adjectives (alongside genitives) to pre-determiner positions, in turn as a result of the retention of definiteness spreading and of adjectives not crossed by nouns; this same property of fronting adjectives, among other constituents, to a position preceding determiners was present in Latin as well (e.g. *doctissimus quisque*), contributing to the ultimate apparent freedom of Latin surface word order; however, adjective frontability was lost in all Romance varieties, presumably as the outcome of acquiring definite determiners that do not spread (while Latin possibly had adjectives with a covert licenser correlated once again with the lack of overt articles, cf. section 6.3 above), whereas in the case of Italiot Greek, it was lost mainly as the result of acquiring the Romance pattern of N-movement over adjectives.

7.5. *Does dialect syntax carry a horizontal signal?*

Thomason and Kaufmann (1988) and Thomason (2001) have suggested that syntactic borrowing is possible, though occurring less frequently than lexical borrowing and in cases of more robust sociolinguistic contact. Indeed, Longobardi et al. (2013: 145-146) have argued that cases of very plausible syntactic borrowing arise in the history of Indo-European languages, and can be interestingly measured through the PCM, but never really disrupt (with the exception of a radical case represented by modern Persian) the genealogical signal that PCM tries to retrace. The finer-grained evidence provided by the present analysis of two strong contact areas between Greek and Romance and Turkish, respectively, clearly strengthen all such conclusions, well supported by all the phylogenetic experiments reported above.

Some further points then need be addressed in this respect. There seem to exist some areal generalizations which can even be encoded directly in terms of parameter values and parametric implications. Consider, e.g., the Circumpontic generalization proposed above (29): in Table A there exists a universal implication, coded in parameter 15, DCN (± *article-checking N*)

and relating the latter parameter to some others: [±*article-checking N (+FGN, ¬+FSN) or +DGR*][35]. It basically expresses the logical necessity of having an article, for a language to decide if this article is a bound morpheme. The Circumpontic generalization can be phrased directly in the parametric format, by stating the Black Sea location of a language as a new type of implicational specification:

(34) ±*art-checking N* is set to + if the language is: (+FGN, ¬+FSN) or +DGR, and +*Circumpontic area*

Formally, introducing non-syntactic information into the implication[36] is somewhat reminiscent of Labov's (1972) introduction of non-linguistic information into the context of phonological rewriting rules. The substantive point is that in some cases it appears that the whole value of a parameter may end up being spread from a variety to the neighboring ones, therefore predictable on geographical grounds: in this case, the value of ±*article-checking N* will be predictably positive if the language has an article and lies in the Circumpontic area[37].

Similarly for the other areal generalization emerging from this study, namely the fact that all varieties of Southern Italy display a positive value for parameter 45 (±*Nover M1As*).

It is true then that in some cases an areal feature literally corresponds to a parametric value, and (maximum) admixture could be precisely calculated at that level (Longobardi et al. 2013). Of course, we cannot exclude that in others it could be representable just as a shared surface pattern generated in parametrically different ways in different languages, though still indirectly affecting the convergence of parameter values through primary data.

The limited nature of syntactic borrowing noted above is likely to be the result of some intrinsic resistance by language's most internally structured systems (such as syntax) to accept changes even when they are motivated by external pressures (like contact) and thus not already banned by other restrictive conditions hypothesized on acquisition/diachronic resetting

[35] FGN = ±*grammaticalized number* (parameter 3); FSN = ±*feature spread to N* (parameter 7); DGR = ±*grammaticalized article* (parameter 11).

[36] For a similar solution via a different avenue, see Sitaridou et al (2015).

[37] The value cannot be technically nullified, however, for the sake of phylogenetic computations, because this would compromise distance calculation with respect to non-Circumpontic languages.

(e.g. *Inertia*: Keenan 1994, 2009, Longobardi 2001). The concept of Inertia was summed up in Longobardi (2001: 278) as follows: «Syntactic change (e.g., categorial reanalysis and parameter resetting) would only take place as a totally predictable reaction by a deterministic core of the language acquisition device (LAD) either to different primary data (typically classical interference, essentially in Weinreich's (1953) sense) or to a change in other more "superficial" components of grammar».

It is tempting to formulate a conjecture in the form of a principle, lying beside Inertia and concerning interference in parameter values:

(35) *Resistance Principle*. Resetting of parameter α from value X to Y in language A as triggered by interference of language B only takes place if a subset of the strings that contribute to constituting a trigger[38] for value Y of parameter α in language B already exists[39] in language A.

In other words, the resetting of a parameter under the influence of interference data is possible only if the new triggers are similar enough to triggers already unmistakably present in the interfered language, though of course not sufficient on their own to trigger the new value. The informal idea is that interference data in parametric syntax must appear at least in part as "familiar" in the interfered language, in order to be used as triggers, thus "contact may exacerbate/reinforce existing tendencies" (Sitaridou 2014a: 53).

For example, the adjectival system of Italiot Greek, noticed as a point of lesser resistance to borrowing (Guardiano 2014, Guardiano and Stavrou 2014), would be permeable to Romance interference owing to the existence of sequences [(indefinite determiner)-N-A], in Greek. The latter are compatible by themselves both with the Romance parametrization (+*N over M1*) and the original Greek one (-*N over M1*), given the possibility in Greek of adjectives merged postnominally, in non-structured positions. Correctly, however, the process does not go as far as to the drop of the expletive article of proper names in Italiot Greek - indeed a new parametric choice becomes relevant and is set for this purpose - because no internal model for bare proper names is available in Greek.

[38] Recall that the relevant definitions from Clark and Roberts (1993) are as follows:

(1) a. *Parameter expression*. A substring of the input text S expresses a parameter p_i just in case a grammar must have p_i set to a definite value in order to assign a well-formed representation to S.

b. *Trigger*. A substring of the input text S is a trigger for parameter p_j if S expresses p_j

[39] In terms of close formal feature composition, rather than phonological resemblence etc., of course.

Similarly, for languages in the Circumpontic area, whatever the direction of borrowing, we must suppose that all affected varieties must already exhibit articles occurring as free morphemes but often adjacent to the noun, in positions compatible with immediate reanalysis as bound morphemes: this must obviously have been the case in previous stages of Pontic Greek. Speculatively, one may notice that Bulgarian and Romanian, as Circumpontic languages, share the value *+article-checking N*, though they did not go as far as sharing values for adjectival parameters (as instead Romance and Italiot Greek did): it is tempting to claim this is so because of a salient surface contrast between Romance heavily postnominal adjectives and South Slavic robustly prenominal ones, retained in Romanian vs. Bulgarian (again coded in the values, neutralizations, and working assumptions of Table A). Considerations precisely of this type are the ones which should possibly follow from a full-fledged Resistance Principle as a condition on horizontal transmission in minimalist syntax, to complement and further restrict the *Inertia Principle* evoked above.

7.6. *Distances and geographical barriers*

Focusing on Southern Italian *Romania*, instead, the PCM was noticed to provide phylogenies largely matching proposed taxonomies of the local varieties, especially singling out the Lausberg area (Lausberg 1939), already pointed out above as a plausible outlier candidate[40].

The resolution of the PCAs seems to be insufficient to immediately draw further insights directly from them, but we can immediately proceed to the analysis of actual syntactic distances, from which two further subgeneralizations emerge, slightly re-modulating the traditional unity of Extreme Southern dialects, here confirmed in the tree topology (figure 22):

(36) a. Salentino, the outlier of the Extreme dialects, displays actual distances which are rather well balanced between its closest relatives and the other two dialects (e.g. 0.0566 to Campano as well as to Ragusa, and 0.0727 to both Northern and Southern Calabrese);

[40] In fact, there is at least one parameter in our TableA+ that clearly exhibits a peculiarity in the Lausberg area dialect (*±partial GenO*).

b. Southern Calabrese is again topologically well classified as an Extreme dialect, displays a sharp contrast between its short distances from Sicily's dialects and the much longer ones with all three other continental varieties (with Campano 0.0943, with both Salentino and Northern Calabrese 0.0727).

These two observations seem to point in one direction: taking the area of Naples (the long-standing political and cultural capital of the continental South) as a plausible radiation center for linguistic innovations, such influences must have reached Salento easily, but Reggio Calabria much more hardly, and in theory the reverse might be true for potential innovations originating from Sicily. For example, at the parametric level, beside at least a pan-Extreme parameter value[41], we observe that parameter 79 in Table A+ (Figure 20), i.e. ±*weak adjectival possessives* is set to + in Sicily and in Southern Calabrese, but to - in Northern Calabrese, Salentino and Campano, whatever the actual direction of change may have been.

It is significant that this is also in agreement with the previous findings on the difference in traditional exposure to Romance interference between Salento Greek and Calabria Greek.

The situation can likely be explained in wide geographical terms: in absolute geographical distance Cellino San Marco is closer to Santa Maria Capua Vetere than Reggio Calabria (S.Maria Capua Vetere-Cellino S.Marco: 402 KM, S.Maria Capua Vetere-Reggio Calabria: 518 KM); in terms of physical barriers, Campania is separated from Reggio Calabria by at least three significant mountain barriers (Pollino, Sila, Aspromonte); finally, an efficient road connection between the two areas has been attempted only recently (and its pitfalls and delays are matter of daily news), while a road connection from Rome and Naples to Salento (and further on to Greece) started with the Via Appia opening 23 centuries ago.

These observations seem to point to the significant role of (physical) barriers to linguistic transmission, independently known to interfere, combined with linguistic barriers, with gene flow/genetic transmission (Barbujani and Sokal 1990). Anyhow, such cases of presumable geographical influence on language distances seem not to affect the overall syntactic phylogeny, which

[41] *Poss.checking D*, a parameter which exhibits a - in all the Sicilian varieties but, crucially, also in Southern Calabrese and Salentino, and in contrast with Northern Calabrese and Campano (which exhibit a +).

is consistent with the established unity of the Extreme Southern dialects based on sound lexical/etymological criteria and patterns.

Although in this study we did not resort to quantification and use of lexical distances (calculating them for all the dialects, lacking standardly organized lexical-etymological sources, has not been possible yet), it would not be surprising if distances eventually inferred from traditional lexical evidence (broadly speaking: number of common etymologies, shared sound laws) turned out to more sharply separate Salentino from Upper dialects, rather than stressing its nearly intermediate position like syntactic distances do. This intuition/expectation is what justifies the assumed clearcut belonging of Salentino within Extreme dialects (Pellegrini 1977).

Indeed, from a recent experiment (Longobardi et al. 2015a), quantifying geographic, genetic, lexical (calculated from the IELex database, Bouckaert et al. 2012) and syntactic (parametric) distances among 12 Indo-European-speaking populations of Europe, syntactic distances turned out to correlate better with geographical distances than lexical ones do (0.21 Mantel correlation for lexicon/geography vs. 0.38 for syntax/geography).

This preliminary (given the low number and dispersal of the relevant populations and the approximate calculation of geographical distances) result may hint at the conclusion that, while ultimately preserving an important genealogical signal, parametric diversity may be subject to "smoother" or more modulated transitions than classical lexical properties.

As a simple heuristic tool for further inquiry, we will close by proposing this hypothesis for testing on more stringent evidence, especially of dialectological nature:

(37) *Language/Geography Conjecture*. If syntactic and lexical distances can be measured and plotted against geographic ones (to be modulated also in terms of barriers and other strictures), syntax/geography will correlate better than lexicon/geography.

This conjecture addresses precisely the question whether the effect of geographical distances and barriers is proportionally higher, as a general rule, on syntax than on more traditional levels of linguistic analysis, with many ramifications. If it were true, it would also be interesting to explore if this can be related to the non-arbitrariness and higher variability of syntactic diversity, constrained empirically by principles like *Inertia* and theoretically by maximum limits for variation (Guardiano and Longobardi 2005's *Anti-*

Babelic Principle), or to the lesser number of entities normally involved in syntactic analyses.

Whatever the outcome, it is important to highlight such issues and others as grounding research questions for a new field of dialectology firmly based on quantitative methods and the new type of entities that formal comparative syntactic approaches can now provide.

8. *Conclusions*

This study of dialect microvariation further strengthens the main claims of the PCM approach, originally designed for longer-range comparisons, and extends them to the micro-comparative scale in three specific points.

Firstly, it confirms that syntax carries a salient historical signal, coded by the PCM in terms of abstract binary parameters.

Secondly, this signal is robustly tree-like, even in critical areas of patent language contact, in spite of some measurable amount of secondary convergence, and of the identification of single, high-prominence, areal syntactic features (codable in the form of parametric implications).

Thirdly, parametric syntax produces a taxonomy of languages and retrieves a sociolinguistic structure fully compatible with the traditionally established ones, with a better understanding of the (weighted) role of geographical factors in language diachrony and their reflection on the level of syntactic distances.

Finally, specific tentative conjectures have been proposed about aspects of horizontal transmission of syntax, which we hope may be explored in further work.

Our main conclusion is that using purely syntactic, lexically unassisted, data, coded through a formal theory of Universal Grammar and reflecting a degree of abstractness which is presumably beyond conscious decisions of speakers and immune to selection by material environments, it seems possible to grasp and reconstruct fragments of non-obvious linguistic, cultural, and social history even at a micro-variationist level of analysis.

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Keywords: syntactic microvariation, PCM, Romance, Southern Italian dialects, Greek, Romeyka, parameters, noun phrase, phylogeny

Appendix: Maps

Map 1: Contemporary Romance (●) and Greek (○) varieties in Southern Italy

Map 2: Contemporary Greek varieties outside Southern Italy

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