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Classification of Gallo-"Italic": Current issues in the literature and proposals for a solution

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CLASSIFICATION OF GALLO-"ITALIC": CURRENT ISSUES IN THE LITERATURE AND PROPOSALS FOR A SOLUTION

Lissander Brasca Bangor University School of Arts, Culture and Language Thesis submitted for the degree of Doctor of Philosophy

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CONTENTS

Declaration	ix
Acknowledgements	ix
Abstract	х
CHAPTER 1 – INTRODUCTION	1
1.1. Geographical introduction	1
1.2. Problem statement: two competing groupings for Romance varieties	3
1.3. Some representative contributions of the two competing traditions	4
1.4. Abstand vs. Ausbau	5
1.4.1. The terminology used in this study	7
1.5. Classificatory criteria and distinct classifications	9
1.5.1. Abstand- and Ausbau-based classificatory criteria in the literature	10
1.6. Possible causes for the disagreement between pro-Gallo- and pro-Italo- traditions	12
1.6.1. First possible cause	12
1.6.2. Second possible cause	13
1.6.3. Third possible cause	15
1.7. Scientific classifications	16
1.8. Summary of the thesis and research questions	18
CHAPTER 2 – Formal inconsistencies in the literature concerning the	
CLASSIFICATION OF GALLO-"ITALIC"	21
2.1. Issues with the 'mixed criterion tradition'	21
2.1.1. The ontological problem in its two forms: the taxon problem and the category problem	22
2.1.1.1. The category problem in the literature	25
2.1.1.1.1. The category problem in Posner (1996), 'The Romance Languages'	25
2.1.1.1.2. The category problem in Trudgill (1992), 'Ausbau	
sociolinguistics and the perception of language status in	
contemporary Europe'. An example concerning Gallo-"Italic":	
the loss of the informativeness of the terms "dialect" and "Italian"	28
2.1.1.1.3. A second example of the category problem in Posner (1996)	30
2.1.1.1.4. A third example of the category problem in Posner (1996). An	
example concerning Gallo-"Italic": the loss of the informativeness	

of the term 'Italian'	31
2.1.1.2. The taxon problem in the literature	32
2.1.1.2.1. The taxon problem in Giovan Battista Pellegrini (1975), 'The five	
linguistic systems of Italo-Romance'	33
2.1.1.2.2. The taxon problem in Pellegrini (1992), 'Il cisalpino e l'italo-	
romanzo'	38
2.1.1.2.3. Pellegrini and the exceptional "diversity of the 'Italo-Romance'	
idioms"	43
2.1.1.2.4. The taxon problem in Robert A. Hall (1974, 1976), 'Comparative	
Romance Grammar'	45
2.1.1.2.5. The taxon problem in Michele Loporcaro (2009), 'Profilo	
linguistico dei dialetti italiani'	51
2.1.2. The 'ad hoc' problem	54
2.1.2.1. The ad hoc problem in the literature	55
2.1.2.1.1. The ad hoc problem in Loporcaro (2009), 'Profilo linguistico	
dei dialetti italiani'	55
2.1.2.1.2. The misleading use of the expression <i>roof-language</i>	
in Loporcaro (2009)	57
2.2. Other formal inconsistencies in the pro-Italo- tradition	61
2.2.1. The 'lack of quantitative evidence' problem	61
2.2.1.1. A concomitant problem: a second form of the taxon problem	62
2.2.1.2. The need for quantitative evidence in Loporcaro (2009)	64
2.2.1.3. The taxon, the category, and the 'lack of quantitative evidence' problems	
in Lausberg (1965), 'Lingüística Románica'	66
2.2.2. The 'inertial use of the nomenclature' problem	73
2.2.3. The 'disharmonious use of the label Italian' problem	75
2.3. Another issue in the literature: the 'a priori exclusion' problem	76
2.4. Preliminary conclusions	79
CHAPTER 3 – Shortcomings in Von Wartburg (1967), 'La fragmentation	
linguistique de la Romania'	83
3.1. Introduction	83
3.1.1. Issues specifically concerning grouping	86
3.1.2. Issues specifically concerning labelling	87
3.1.3. Utility of falsifying von Wartburg's "classification"	90
3.2. Outline and discussion of von Wartburg (1967)	90
3.2.1. The Gallo-"Italic" geolects described in von Wartburg (1967): discrepancy	91
3.2.2. Statements about the presence of Western Romance traits in the Gallo-"Italic" geolects	92

3.2.3. Statements about the presence of Celtic substrate effects in the Gallo-"Italic" geolects	94
3.2.4. Statements in which the Gallo-"Italic" geolects are referred to as not	
being Gallo-Romance	96
3.2.5. Statements in which the Gallo-"Italic" geolects are referred to as not	
being Western Romance	98
3.2.6. Sharing Germanic superstrate with Tuscan	100
3.2.7. Heteronomy with respect to the Tuscan/Italian literary language	102
3.2.7.1. Critical convergence: a clarification about von Wartburg (1967)	107
3.2.8. Summing up von Wartburg's (1967) stance about the classification of Gallo-"Italic"	108
3.3. Why is a quantitative approach needed?	111
3.3.1. 'Classical' diglossia in Italy	111
3.3.2. Heteronomy of Gallo-"Italic"	113
3.3.3. Dialect studies describe Gallo-"Italic" as still showing Western Romance and	
Gallo-Romance traits	114
3.3.4. Scholarly proposals of synchronological classification for Gallo-"Italic" by	
quantitative methods: the Dialectometric School of Salzburg	118
3.3.4.1. Isogloss maps	120
3.3.4.2. Similarity analysis	121
3.3.4.3. Hierarchical clustering analysis	123
3.3.4.4. Conclusions	125
3.4. Conclusions on von Wartburg (1967) and the pro-Italo- tradition	125

CHAPTER 4 – Empirically testing the post-Wartburg hypothesis by comparing

INTELLIGIBILITY BETWEEN OCCITAN, GALLO-"ITALIC", AND TUSCAN GEOLECTS	128
4.1. Theoretical background	128
4.1.1. Link between objective linguistic distance and (mutual) intelligibility	129
4.1.2. Aims of the current study	131
4.1.2.1. Predictions made by the post-Wartburg hypothesis in terms of intelligibility	133
4.1.2.2. The experimental hypothesis of the current study	136
4.1.2.3. Summary: research questions and predictions	137
4.1.3. Which method for testing intelligibility?	138
4.1.4. Control variables	139
4.1.5. Asymmetry in intelligibility	140
4.2. Aims and method	141
4.2.1. Design of the study	142
4.2.1.1. Stimuli (experimental items) vs. fillers (non-experimental items)	144
4.2.1.2. Reasons for running the study across two chains	146
4.2.1.3. Reasons for intersecting the chains	147

4.2.1.4. Divergences between 'item locality' and 'participant locality'	149
4.2.2. Material	152
4.2.2.1. Background questionnaire	152
4.2.2.2. Stimuli	155
4.2.2.2.1. Reasons for choosing the SPIN test	157
4.2.2.2.2. Number of stimuli	158
4.2.2.2.3. Stimuli – First selection and translation	159
4.2.2.2.4. Stimuli – Recordings	159
4.2.2.2.5. Stimuli – Final selection	160
4.2.2.2.6. Stimuli – Acoustic lists	161
4.2.2.3. Answer sheet	167
4.2.3. Participants: selection criteria and descriptive statistics	167
4.2.3.1. Participant selection criteria	168
4.2.3.2. Participants' recruitment and selection	169
4.2.3.3. Participants: descriptive statistics	172
4.2.3.3.1. Chain A	172
4.2.3.3.2. Chain <i>B</i>	173
4.2.3.3.3. Ethics statement	174
4.2.4. Procedure	176
4.2.4.1. Preparation for data collection	177
4.2.4.2. Background questionnaire	177
4.2.4.3. Intelligibility test (task)	177
4.2.5. Updated post-Wartburg hypothesis predictions	178
4.2.5.1. Updated predictions with reference to chain A data points	179
4.2.5.2. How to test the predictions statistically	180
4.3. Results	186
4.3. <i>A</i> . Chain <i>A</i>	187
4.3.A.1. Intelligibility scores – Descriptive statistics and estimates	187
4.3.A.2. Controlling for gender of voice	190
4.3.A.3. Controlling for participant gender	192
4.3.A.4. Control variables	193
4.3.A.4.1. Foreign language competence – Question 1	193
4.3. <i>A</i> .4.2. Latin language competence – Question 2	196
4.3.A.4.3. Contact with target areas – Question 5	197
4.3. <i>A</i> .4.4. Exposure to target languages – Question 6	199
4.3.A.4.5. Attitudes – Questions 7, 8 and 9	201
4.3.A.4.6. Control variables: multiple regression analysis	208
4.3.A.4.6.1. Testing the assumptions of multiple regression with	

intelligibility score on stimuli 'at west' as dependent	
variable	210
4.3.A.4.6.2. Testing the assumptions of multiple regression with	
intelligibility score on stimuli 'at east' as dependent	
variable	213
4.3.A.4.6.3. Multiple regression with 'intelligibility score on	
stimuli at west' as dependent variable	216
4.3.A.4.6.4. Multiple regression with 'intelligibility score on	
stimuli at east' as dependent variable	217
4.3.A.4.6.5. Summing up results of multiple regressions	217
4.3.A.5. Comparing intelligibility scores	217
4.3.A.5.1. Intelligibility estimates and tests of normality	218
4.3.A.5.2. Comparing intelligibility scores across the Romagnol-Tuscan	
border with intelligibility scores across the Occitan-Piedmontese	
border	221
4.3.A.5.3. Comparing intelligibility scores across the Romagnol-Tuscan	
border with intelligibility scores across the Alpine ridge	223
4.3.A.5.4. Comparing the magnitude of the difference of intelligibility	
scores across the Apennines with the magnitude of the difference	
of intelligibility scores across the Alps	225
4.3.A.5.5. Comparing intelligibility scores across the Apennines with	
intelligibility scores across the Po valley and Romagna	229
4.3.A.5.6. Comparing the magnitude of the difference of intelligibility	
scores across the Apennines with the magnitude of the difference	
of intelligibility scores across the Po valley and Romagna	231
4.3. <i>A</i> .6. Interim discussion of chain <i>A</i> results	234
4.3. <i>B</i> . Chain <i>B</i>	238
4.3. <i>B</i> .1. Intelligibility scores – Descriptive statistics and estimates	239
4.3. <i>B</i> .2. Controlling for gender of voice	242
4.3. <i>B</i> .3. Controlling for participant gender	243
4.3. <i>B</i> .4. Control variables	244
4.3. <i>B</i> .4.1. Foreign language competence – Question 1	245
4.3. <i>B</i> .4.2. Latin language competence – Question 2	247
4.3. <i>B</i> .4.3. Contact with target areas – Question 5	248
4.3. <i>B</i> .4.4. Exposure to target languages – Question 6	251
4.3.B.4.5. Attitudes – Questions 7, 8 and 9	253
4.3.B.4.6. Control variables: multiple regression analysis	260
4.3.B.4.6.1. Testing the assumptions of multiple regression with	

vi

intelligibility score on stimuli 'at west' as dependent	
variable	262
4.3.B.4.6.2. Testing the assumptions of multiple regression with	
intelligibility score on stimuli 'at east' as dependent	
variable	265
4.3.B.4.6.3. Multiple regression with 'intelligibility score on	
stimuli at west' as dependent variable	268
4.3.B.4.6.4. Multiple regression with 'intelligibility score on	
stimuli at east' as dependent variable	268
4.3.B.4.6.5. Summing up results of multiple regressions	269
4.3.B.5. Comparing intelligibility scores	269
4.3.B.5.1. Intelligibility estimates and tests of normality	270
4.3.B.5.2. Comparing intelligibility scores across the Emilian-Tuscan border	
with intelligibility scores across the Occitan-Piedmontese border	272
4.3.B.5.3. Comparing intelligibility scores across the Emilian-Tuscan border	
with intelligibility scores across the Alpine ridge	276
4.3.B.5.4. Comparing the magnitude of the difference of intelligibility scores	
across the Apennines with the magnitude of the difference of	
intelligibility scores across the Alps	278
4.3.B.5.5. Comparing intelligibility scores across the Apennines with	
intelligibility scores across the Po valley	282
4.3.B.5.6. Comparing the magnitude of the difference of intelligibility scores	
across the Apennines with the magnitude of the difference of	
intelligibility scores across the Po valley	284
4.3.B.6. Interim discussion of chain B results	286
4.3.1. Corollary: the strong internal Abstand unity of Gallo-"Italic"	289
4.4. Discussion	291
4.4.1. Conclusion of the empirical study	305
CHAPTER 5 – Conclusion	308
5.1. Main findings	308
5.1.1. Part I: epistemological arguments rejecting the classification of Gallo-"Italic" as	
Italo-Romance	308
5.1.1.1. Problems concerning grouping	309
5.1.1.2. Problems concerning labelling	313
5.1.2. Part II: empirical evidence rejecting the classification of Gallo-"Italic" as Italo-Romance	315
5.1.3. Summary of epistemological and empirical arguments against classifying	
Gallo-"Italic" as Italo-Romance	319

5.2. Originality and significance of the present thesis	
5.3. Contribution to more general and more particular linguistic knowledge, beyond the aims of	
the current thesis	327
CHAPTER 6 – LIMITATIONS AND FUTURE DIRECTIONS	330
6.1. Limitations of this thesis	330
6.1.1. Part I	330
6.1.2. Part II	330
6.2. Future directions	337
6.2.1. Linguistic questions for future research	337
6.2.2. Classification and language policy	343
6.2.2.1. Classification, academic support, and institutional support	344
6.2.2.2. Classification and language (corpus) planning	346
APPENDICES	350
Appendix 1a – Participant Consent Form in Italian	351
Appendix 1b – Participant Consent Form in French	352
Appendix 2a – Questionnaire for the Piedmontese-3 participants	353
Appendix 2b – Questionnaire for the Occitan-1 participants	357
Appendix 3a – Answer sheet in Italian	361
Appendix 3b – Answer sheet in French	363
Appendix 4 – Sentence meanings and their Lombard translations	365

REFERENCES

366

DECLARATION

'I hereby declare that this thesis is the results of my own investigations, except where otherwise stated. All other sources are acknowledged by bibliographic references. This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree unless, as agreed by the University, for approved dual awards.'

I confirm that I am submitting the work with the agreement of my Supervisor(s)'

'Yr wyf drwy hyn yn datgan mai canlyniad fy ymchwil fy hun yw'r thesis hwn, ac eithrio lle nodir yn wahanol. Caiff ffynonellau eraill eu cydnabod gan droednodiadau yn rhoi cyfeiriadau eglur. Nid yw sylwedd y gwaith hwn wedi cael ei dderbyn o'r blaen ar gyfer unrhyw radd, ac nid yw'n cael ei gyflwyno ar yr un pryd mewn ymgeisiaeth am unrhyw radd oni bai ei fod, fel y cytunwyd gan y Brifysgol, am gymwysterau deuol cymeradwy.'

Rwy'n cadarnhau fy mod yn cyflwyno'r gwaith gyda chytundeb fy Ngrichwyliwr (Goruchwylwyr)'

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ABSTRACT

In this thesis I contribute towards settling a disagreement among scholars concerning the classification of Gallo-"Italic".¹ The scholarly literature unanimously describes Gallo-"Italic" as showing all the linguistic traits that distinguish Gallo-Romance from the other Romance varieties. Nonetheless, while some scholars classify Gallo-"Italic" as Gallo-Romance, some others classify it as Italo-Romance ('pro-Italo-' scholars). These two labels ('Gallo-Romance' and 'Italo-Romance') are irreconcilable, as they are regularly presented in the literature as being mutually exclusive and, in particular, they are normally used in the family tree model to name two cousin taxa: Gallo-Romance is a Western Romance daughter, while Italo-Romance is an Eastern Romance daughter. I argue that the pro-Italo- stance has to be rejected for several different reasons. Firstly, by making recourse to Kloss's distinction of Abstand vs. Ausbau, I show that, in their proposed classifications, the pro-Italo- scholars mix the Abstand and the Ausbau criteria and that this is inconsistent with the aims of classificatory science. In fact, following Kloss (1967), Abstand and Ausbau have to be seen as classificatory criteria of two independent classifications that, moreover, should be expressed by two formally distinct nomenclatures. I argue that, in science, classifications have an *informative function*, and that by employing such a mixed criterion pro-Italo- scholars have provided a flawed "classification" that is informative neither of the Abstand nor of the Ausbau status of the varieties classified, hence it is not useful for scientific purposes and should therefore be rejected. Secondly, I show that some scholars' proposal of grouping Gallo-"Italic" with Italo-Romance in a synchronological classification (i.e. based on current linguistic similarity) should be rejected too. These scholars claim that, over the centuries, contact with Tuscan/Italian literary language would have made Gallo-"Italic" more similar to Italo-Romance than to its sibling Gallo-Romance varieties. However, despite making a statement that is quantitative in nature, these scholars do not provide quantitative evidence supporting it. Through the above arguments-that

¹ I write Gallo-"Italic" with inverted commas because the Italic linguistic profile of this group is just the point of contention in this thesis. Partly interpreting Pierre Bec's suggestion (Bec, 1970-1971: II 316), it might be better labelled as 'Cisalpine Gallo-Romance'.

are epistemological in nature—I reject the pro-Italo- stance on the basis of linguistic evidence that is already available. Finally, by means of a series of empirical tests comparing intelligibility between speakers of different geolects, I provide new linguistic evidence that present-day Gallo-"Italic" is still linguistically more similar to the bordering Gallo-Romance than to the bordering Italo-Romance geolects, hence it is still properly grouped with the former and not with the latter, even from a synchronological standpoint.

CHAPTER ONE

INTRODUCTION

1.1. GEOGRAPHICAL INTRODUCTION

Scholars agree in considering the Massa-Senigallia line—also known as *La Spezia-Rimini* line¹ running along the Apennine mountains ridge in Italy,² as an important bundle of isoglosses in the Romance domain (Trager, 1934; Bartoli, 1936; Wartburg, 1936, 1967; Lausberg, 1965; Pellegrini, 1975, 1992; Loporcaro, 2009), dividing it into two branches known as Western and Eastern Romania. Scholars also agree in considering most Romance varieties historically spoken between the Massa-Senigallia line to the south, and the Alps to the north, as a homogeneous group known as Gallo-"Italic". This group covers the whole territory of the Italian administrative regions of Lombardy, Emilia-Romagna, Liguria, most of Piedmont—excluding the western Franco-Provençal and Occitan valleys—Northern Marche, Lunigiana valley in Northern Tuscany, the western part of the province of Trent, some administratively Venetan localities on the eastern coast of the Garda lake, the Swiss canton Ticino and the southern slope valleys of Grisons in Switzerland³.

¹ Based on dialectological descriptions, some scholars consider the definition "*Massa-Senigallia* line" more appropriate. Some suggest "*Carrara-Fano* line" (Pellegrini 1992: 285). Hull (1982/2017: 9) proposes "*Carrara-Pesaro* line".

² In the present study, 'Italy' is used with the currently common extra-linguistic meaning of 'territory of the Italian Republic'.

³ See Devoto & Giacomelli, 1972, among others.



Figure 1.1. Map showing where the languages of the Gallo-"Italic" group are spoken (inside the thick line). The Cisalpine continuum is inside the 'fringed' line (it includes Gallo-"Italic"). The Rhaeto-Cisalpine (or Padanian) continuum (Hull, 1982/2017) includes Cisalpine plus Romansh. Small crosses: state borders; dashed lines: regional administrative borders.⁴

Some studies (e.g. Lausberg, 1965: 74, 97) distinguish the proper Gallo-"Italic" from Venetan within a "Northern-Italian" group (see also Loporcaro 2009: 61), while others (e.g. Ethnologue⁵) also refer to Venetan as a part of Gallo-"Italic". However, what is relevant for the purposes of the present study is that scholars in any case agree on including the geolects labelled as Gallo-"Italic" within a taxonomic unit that contrasts as a whole with all the geolects spoken in Italy south of the Massa-Senigallia line.⁶

⁴ The Töitschu, Mòcheno, Cimbrian, and Resian (endangered) languages are not represented in this map. Find them here by selecting 'Italy': http://www.unesco.org/languages-atlas/index.php

⁵ <u>http://www.ethnologue.com/subgroups/gallo-italian</u>. *Gallo-Italian* is a less common way of referring to Gallo-"Italic".

⁶ The UNESCO Atlas of the World's Languages in Danger (http://www.unesco.org/languages-atlas/index.php) refers to the languages forming the Gallo-"Italic" group by the ISO 639-3 codes as follows: *Emilian language [egl], Ligurian language [lij], Lombard language [lmo], Piedmontese language [pms], Romagnol language [rgn]*. See a clarification in footnote 7.

1.2. PROBLEM STATEMENT: TWO COMPETING GROUPINGS FOR ROMANCE VARIETIES

While the extent and the internal articulation of Gallo-"Italic" are not a matter of disagreement among scholars, an issue appears when dealing with its taxonomic collocation within wider Romance sub-groups. The issue derives from the co-occurrence of the following premises:

Premise a – the scholarly literature proposes two different groupings concerning Gallo-"Italic". According to some scholars (see Section 1.3), Gallo-"Italic" forms part of the Gallo-Romance group, along with French, Occitan, Franco-Provençal and Rhaeto-Romance (I will call these authors the 'pro-Gallo- tradition'); conversely, according to another scholarly tradition (see Section 1.3), which seems more influential, Gallo-"Italic" forms part of the Italo-Romance group, along with Tuscan and the other Romance varieties spoken in Italy south of the Massa-Senigallia line (henceforth also 'Peninsular geolects')⁷, namely South Italian and Sicilian⁸ (I will call this the 'pro-Italo- tradition');

Premise b – the labels 'Gallo-Romance' and 'Italo-Romance' are normally used in the family tree model to represent two cousin *taxa*: Gallo-Romance is a Western Romance daughter, while Italo-Romance is an Eastern Romance daughter. So, the two labels are irreconcilable from the cladistic standpoint;

Premise c – the authors from both traditions describe Gallo-"Italic" as sharing all the isoglosses that, in their own studies, are considered relevant in distinguishing Western Romance—and in particular Gallo-Romance—from Italo-Romance.

Assuming that the labels 'Gallo-Romance' and 'Italo-Romance' are mutually exclusive members of the same nomenclature, as they seem to be in the literature I am aware of, the ascription of Gallo-"Italic" to both these groups reveals an underlying taxonomic inconsistency that needs to be explained (see research questions 1 to 3 in Section 1.8).

⁷ For sake of simplicity, by 'Peninsular geolects' I do not refer here, and in the rest of this thesis, to the following varieties, which are acknowledged as genealogically Gallo-Romance in the literature, and are spoken in some linguistic islands in Italy south of the Massa-Senigallia line (within brackets are the respective ISO 639-3 codes by which the UNESCO Atlas of the World's Languages in Danger refers to these "endangered" varieties): *Faetar (frp), Gardiol (oci).* By 'Peninsular geolects' I will not refer to *Gallo-Sicilian (lmo)* either, generally acknowledged as Gallo-"Italic". Indeed, the analysis of all these varieties is not relevant to the current aims.

⁸ The UNESCO Atlas of the World's Languages in Danger (http://www.unesco.org/languages-atlas/index.php) refers to these ("potentially vulnerable") languages by the ISO 639-3 codes as follows: *South Italian language [nap], Sicilian language [scn]*.

1.3. Some representative contributions of the two competing traditions

Geoffrey Hull's 1982 PhD thesis (revised and published in 2017) could be seen as the most representative study of the pro-Gallo- tradition, in that its main goal is to propose a structural-genealogical classification of Romance varieties spoken in Northern Italy on the basis of qualitative data taken from dialect studies and from medieval literature. According to Hull (1982/2017), *"Padanian"*, made up of the Cisalpine and Rhaetic⁹ continua, is part of the Gallo-Romance branch of Western Romance, and its Gallo-Romance linguistic nature was still evident in the modern vernaculars at the time of his research:

"Hence I conclude that the Romance vernaculars of Northern Italy and Rhaetia have conserved, and in many cases have developed further, their original Gallo-Roman structure, and that the superficial Italic, German and Franco-Occitan influences on certain of them are insufficient to warrant a classification of all or part of the Rhaeto-Cisalpine zone as "Italo-Romance" in the strictly linguistic sense of the term. The "Padanian" dialects, although heteronomous today, are essentially uniform and therefore unifiable, and constitute with Franco-Burgundian (= French + "Franco-Provençal") and Occitano-Catalan a living branch of the Gallo-Romance linguistic tradition." (Hull, 1982: 660).¹⁰

Before Hull (1982), a few other scholars had already explicitly claimed the Gallo-Romance (and not the Italo-Romance) linguistic identity of Northern Italy, among them the Swiss Romanist Heinrich Schmid (Schmid, 1956) and the Occitanist Pierre Bec (Bec, 1970-1971; see also Hull, 1990). Hierarchical clusterings resulting from some dialectometric studies corroborate these claims, showing that Gallo-"Italic" is grouped more closely with standard French and the other Gallo-Romance varieties than with standard Italian and any Romance variety spoken south of the Massa-Senigallia line (Goebl, 2008; Tamburelli & Brasca, 2018).

Some representative scholarly studies expressing the opposing view, i.e. the pro-Italo- tradition, are Wartburg (1967), Lausberg (1965), Hall (1974, 1976), and Pellegrini (1975, 1992). The present

⁹ In Hull (1982/2017), "Cisalpine" is the set of the Western Romance varieties spoken in Northern Italy: Gallo-"Italic", Venetan, Dolomitic Ladin, and Friulian. Hull reserves the term "Rhaetian" for the ultra-archaic Romansh vernaculars of the Grisons, in Switzerland.

¹⁰ See Vol. II, p. 339 of the 2017 revision.

study analyses these contributions because, although they are not so recent, all of them are frequently cited in more recent literature, inter alia Posner (1996) and Loporcaro (2009), as valid sources in the field of classification of Romance languages. A section is devoted to Loporcaro (2009) itself as a more recent representative of this tradition. Note that by labelling them as 'pro-Italo-', I mean that, in these studies, Gallo-"Italic" varieties are either *explicitly referred to* as being part of the Italo-Romance group, or *de facto presumed* to be. This latter case occurs when Gallo-"Italic" is included within Italo-Romance and excluded from Gallo-Romance in graphic representations, the organization of the text, the division of the sections, as well as the titles of the sections, etc.

1.4. ABSTAND VS. AUSBAU

This classificatory problem (two irreconcilable groupings) can best be understood by applying the distinction, first proposed by Kloss (1952, 1967), between *Abstand language* and *Ausbau language*. The *Abstand* status of a variety depends on the degree of its linguistic distance from other bordering varieties, while its *Ausbau* status depends on the sociological status attributed to it within a literate society:

1. "Abstand language is a predominantly linguistic concept ...The concept of ausbau language is primarily a sociological one." (Kloss, 1967: 159).

2. "The term Abstandsprache is best paraphrased as 'language by distance', the reference being of course not to geographical but to intrinsic distance. The term Ausbausprache may be defined as 'language by development'. Languages belonging in this category are recognized as such because of [their] having been shaped or reshaped, molded or remolded – as the case may be – in order to become a standardized tool of literary expression. We might say that an Ausbausprache is called a language by virtue of its having been reshaped, i.e., by virtue of its 'reshapedness', if there were such a word." (Kloss, 1967: 158).

Kloss shows that the *Abstand* status and the *Ausbau* status of a language are mutually independent approaches from the ontological and conceptual point of view: they are defined on two "unrelated dimensions" (Bailey, 1994: 4, see also 29). This is to say that how a variety is classified on the

Ausbau dimension¹¹ does not determine its classification on the *Abstand* dimension and vice versa (see also Ammon 1989 and Fishman 2008; also Tamburelli 2014). Therefore, a linguistic variety can be currently heteronomous with respect to a standard (*Ausbau*) variety that does not share its own genealogical-structural history or a wide part of it, namely, that is part of another independent *Abstand* language. In Kloss (1967), various examples taken from the linguistic situation of some European and Asiatic countries show how the *Ausbau* status of a variety is insensitive to—hence freely combinable with—its *Abstand* status. For instance:

3. "Many of the leading tongues of the world, among them English, French, and German, are both abstand and ausbau languages, i.e., they are called languages both because of [their] having been made over and because of their intrinsic distance from all other languages. But a great many other tongues fall into that category ("languages")¹² merely by virtue of their being ausbau languages." (Kloss, 1967: 159).

Given this ontological and conceptual mutual independence, a linguist who intends to provide a classification of Romance languages by their *Abstand* status should take as relevant only linguistic features (i.e. isoglosses), and not sociological aspects. Besides, this is what is normally done when classifying pre-literate tribes' languages:

4. "An abstand language is a linguistic unit which a linguist would have to call a language even if not a single word had ever been written in it. Whenever linguists face the task of enumerating the languages of a large number of pre-literate tribes, they have to decide which vernaculars they ought to list separately and which they ought to treat as belonging to a cluster of dialects which together form an indivisible linguistic unit." (Kloss, 1967: 158).

Integrating Kloss's reference to pre-literate tribes, one can use expressions like "reconstructed (proto-)languages", "Proto-Germanic language", "Proto-Indo-European language" (Campbell,

¹¹ Namely, on the basis of the criterion according to which, some heteronomous varieties would be grouped together because they are heteronomous towards the same autonomous *Ausbau* variety (see "standardology" in Section 1.5.1; see Section 2.1.1 and footnote 16 below).

¹² A criticism could be made to this passage, which is in any case not relevant for the aims of this section. Consistently following the very Klossian distinction between *Abstand* language and *Ausbau* language, one would expect Kloss not to define "languages" as "[one] category". Rather, one would expect him to define *Abstand* language and *Ausbau* language as two categories of two distinct types of classification. Indeed, this is what Kloss (more properly, in my opinion) does in example 2 above, where "Ausbausprache" is defined as a "category".

1998: 123, 124, 166, 187)¹³, "lingua [antenata] ricostruita" (Alinei, 2000: 190)¹⁴, "si ricostruisce una lingua originaria" (Graffi & Scalise, 2002: 248),¹⁵ and the like, as examples of scholarly use of the term *language (lingua* in the above Italian quotations) in an exclusive *Abstand* sense.

In summary, two distinct ways of conceptualising the status of a linguistic variety in relation to other varieties—*Abstand* and *Ausbau*—are at the basis of the polysemic use of the term *language* in the scholarly literature: "*Abstand* language" and "*Ausbau* language". To avoid misunderstanding, whichever of these two meanings is intended should be specified in any context where the word *language* is used.

1.4.1. The terminology used in this study

In this section I present the terminology that I am using in the current thesis and that possibly needs to be clarified in advance.

Geolect refers to linguistic variety defined along the axis of geographical variation. It is synonymous with 'geographical variety'. It usefully allows me to avoid the use of the more usual 'dialect', whose ambiguity in the literature as 'geographical variety' and '(social) sub-standard variety' (see e.g. Trudgill 1992, analysed in Section 2.1.1.1.2 below; and Posner 1996, analysed in Section 2.1.1.1.4) is among the main objects of analysis and criticism of the current thesis. Goebl (1995: 110) uses the similar form "locolett[o]" (approximately "locality-lect") to express basically the same concept. In order to refer to the concept of '(social) sub-standard variety' I will use *basilect* as opposed to *acrolect*. 'Dialect' will be avoided, and used only in quotes and in considerations on scholarly meta-language (e.g. in Sections 2.1.1.1.2 and 2.1.1.1.4).

In line with the above considerations, I will use *mono-geolectal* instead of the more usual 'monodialectal'.

Linguistic traits is intended to encompass 'phonological, morphological, syntactic and lexical traits'; it coincides with 'isoglosses'.

¹³ "... for Proto-Germanic..., there are no written attestations at all, and the *language* is known only from comparative reconstruction. ... [E]very proto-language was once a real *language*... [T]he original proto-*language* (Proto-Indo-European)." (Campbell, 1998/2006: 123, 124, 187 [emphasis added]).

¹⁴ "reconstructed [ancestor] language". The author continues: "…la *lingua* così ricostruita è stata chiamata 'proto*lingua*'… [S]i è arrivati a ricostruire il cosiddetto… Proto-IE, cioè la *lingua* antenata…".

¹⁵ "an original language is reconstructed". The authors continue: "...a queste *lingue* si dà il nome di... protogermanico... proto-slavo...".

Similarly, *linguistic convergence/distance/similarity/etc.* means 'phonological, morphological, syntactic and lexical convergence/distance/similarity/etc.' (but see Section 4.3.*A*.6 for the more particular meaning that 'linguistic' has in Chapter 4—i.e. the empirical study—and in the following chapters).

In the expression *Abstand criterion*, the meaning of '*Abstand*' should be considered as broader than the literal translation from the German 'distance', so that '*Abstand* criterion' will correspond more generically to 'linguistic criterion' as opposed to 'sociological or geopolitical or literary criterion'. Given that all throughout the current thesis the contrast between *Abstand* and *Ausbau* criterion will often be focused on, the fact that we are dealing with the application of one of the possible '*Abstand*-based criteria' will be focused on via the abbreviated form (*Abstand*). For instance, "genealogical (*Abstand*)" should be taken to mean "genealogical (which is an *Abstand* criterion, i.e. one of the possible Abstand criteria considered in the current study, the genealogical and the synchronological one, see Section 1.6.2)". It should not be taken to mean "genealogical (*AKA Abstand*). '*Abstand*-based classification' will mean a classification where affinity is assessed on the basis of the sharing of isoglosses, namely of linguistic (structural and lexical) traits.

Similarly, *Ausbau criterion* will be used to refer to a 'sociological or geopolitical or literary criterion' as opposed to a 'linguistic criterion', and will be normally abbreviated into (*Ausbau*). Importantly, '*Ausbau*-based classification' will mean a classification which groups geolects based on the *Ausbau* (standard and dominant) variety towards which they are (currently) heteronomous (for "autonomy [vs.] heteronomy" see Trudgill, 1992)¹⁶. This being the case, it is questionable whether an *Ausbau*-based grouping can be considered a 'classification', since 'classification' should presuppose a hierarchically structured grouping in classes and sub-classes and sub-sub-classes, etc., while grouping geolects based on their dominant variety seems to yield a 'mono-articulated list of groups' rather than a structure of (sub-)classes. However, answering this particular question is not necessary in order to in turn answer the research questions of the current study (see Section 1.8), where the core concern is which varieties should Gallo-"Italic" be grouped

¹⁶ "It is usual in sociolinguistics to say that... standard varieties, which are enshrined in grammar books and dictionaries and have bodies of literature written in them, are *autonomous*: they have, as it were, an independent existence. The nonstandard local dialects, on the other hand, are *heteronomous* or dependent... A reasonable definition of an Ausbau language is thus that it consists of an autonomous standard variety together with all the nonstandard varieties from the dialect continuum which are heteronomous with respect to it. ... Autonomy can be lost or acquired... Autonomy and heteronomy can also be disputed." (Trudgill, 1992: 169 [italic original]).

with. For the sake of simplicity, I will therefore refer to all the various proposals for the grouping of Gallo-"Italic" as 'classifications', with the broader meaning of 'grouping according to a criterion', whatever criterion they are based on, in line with the traditional terminology used in the traditional literature that is the object of analysis of the first three chapters.

Romania is the Romance linguistic domain. It is important to note that in the current English spelling and pronunciation, it is a homograph and homophone of the contemporary European country where the Romanian language is spoken. For the sake of clarity, in the current thesis, I will use the obsolete English spelling 'Rumania' and 'Rumanian', respectively, for the contemporary country and the contemporary language.

Peninsular geolects refer to the Romance geolects spoken south of the Massa-Senigallia line.¹⁷ For the sake of simplicity, I will use *Peninsular geolects* to also refer to the Sicilian ones, even though Sicily does not form part of the Italian Peninsula. It will not refer, however, to the Sardinian geolects.

I prefer and will use the form *Sardinian*, which seems to be the one widely used in the literature, while some scholars use the form 'Sard'.

Double inverted commas ("...") demarcate quotations from previous literature. Single inverted commas ('...') meanwhile are used as 'scare quotes', to mean 'so-called', to put into focus one or a number of words in the sentence, or to serve a meta-linguistic function (e.g.: the label 'Italo-Romance'; the word 'language').

1.5. CLASSIFICATORY CRITERIA AND DISTINCT CLASSIFICATIONS

An analogy can be made between the ontological and conceptual mutual independence of:

- *a*. the *Abstand* status of a linguistic variety
- b. the Ausbau status of a linguistic variety

and the mutual independence of two possible dichotomies, according to which animals can be classified:

¹⁷ In *Peninsular geolects*, the varieties of Southern Italy acknowledged in the literature as being genealogically Gallo-Romance are not included. Gallo-Sicilian is not included either. See Section 1.2.

- *a*[']. mammal vs. non-mammal
- b'. domestic vs. non-domestic.

Classification of an animal according to one of the two criteria (a' or b') does not affect classification according to the other criterion (b' or a') (see Bailey, 1994). Indeed, some animals are *simultaneously* mammal *and* domestic, some are mammal *and* non-domestic, some are nonmammal *and* domestic, and some are non-mammal *and* non-domestic. Thus, the two dichotomies (a' and b') correspond to two distinct perspectives of observation, description, and classification of animals (two distinct analytical perspectives). This does not exclude the possibility of combining the two classifications, but in this case their combination would yield a bidimensional classification (see Bailey, 1994: 4, also 29), graphically representable by a four cell matrix:

	domestic	non-domestic
mammal		
non-mammal		

Table 1.1. Example of a bidimensional classificatory matrix.

In this matrix, the independence of the two dimensions (vertical and horizontal) is respected and recognizable. For the same reason, *Abstand* on the one hand and *Ausbau* on the other should be seen as two distinct and independent classificatory criteria of linguistic varieties. They can be combined into a bidimensional classification, but not into a unidimensional one.

1.5.1. ABSTAND- AND AUSBAU-BASED CLASSIFICATORY CRITERIA IN THE LITERATURE

I will now take a very general look at how *Abstand* and *Ausbau* criteria are applied in scholarly proposals of classification for Romance varieties (without direct reference to Gallo-"Italic", for now). I will take advantage of the overview proposed in Posner (1996) 'The Romance Languages'. In the chapter headed *"How many Romance languages?"*, Posner orders various classificatory criteria proposed in the history of Romance linguistic studies. I list these criteria below with some of Posner's relevant lines:

a) "STATE LANGUAGES... The layman has no difficulty in accepting as 'language' the five that have 'armies and navies'... – that is French, Spanish, Portuguese, Italian and Rumanian." (Posner, 1996: 189).

- b) "LITERARY LANGUAGES... Other two Romance 'languages' gain general recognition mainly because of their status as medieval literary languages coupled with the militancy of linguistic propagandists. These are Occitan and Catalan." (Posner, 1996: 190).
- c) "LINGUISTS' LANGUAGES... Two of the textbook Romance languages owe their status to the whims of a late nineteenth-century linguist, the Italian Graziadio Ascoli...: Rhaeto-Romance... and Franco-Provençal." (Posner, 1996: 192-194).
- d) "ONE-OFF... The inclusion of Sard as a separate language is agreed by most Romanists, on the ground that the island was cut off early from the rest of the Romance area." (Posner, 1996: 195).
- *e)* "A THOROUGHLY DEAD LANGUAGE... Another language that sometimes rounds off the textbook score is Dalmatian, now totally extinct. It is seen as bridging the gap between Italian and Romanian..." (Posner, 1996: 195).
- f) "GENETIC CLASSIFICATION... Classically, sub-grouping is based on historical and geographical criteria. Assuming a past-time unified language, the Stammbaum model looks for successive innovations, shared by more than one daughter language..." (Posner, 1996: 196).
- g) "TYPOLOGY... Typological classification of the Romance languages is less commonly practised than genetic grouping. The [Romance] languages are... very similar typologically, and indeed fit into patterns that are familiar in European languages." (Posner, 1996: 200).
- *h*) "DIALECTOMETRY... Modern 'dialectometry' attempts to measure the linguistic distance between the local varieties, taking into account degrees of interaction. ...It is the dialect atlas that fostered the idea of measuring the distance between dialects..." (Posner, 1996: 202).
- i) "STANDARDOLOGY... A type of classification known as 'standardology' distinguishes the Abstand ('stand-off') from the Ausbau ('built-up') language, each embracing a range of related varieties, social or regional. The former may on linguistic grounds be distinguishable from its neighbors, but it is conscious elaboration [*Ausbau*] that establishes the clearly delimited standard." (Posner, 1996: 206).

j) "LANGUAGE AND DIALECT... Grouping of European Romance 'dialects' is usually done on the basis of genetic classification and of the 'roofing' language¹⁸." (Posner, 1996: 217).

This rough overview is sufficient to show that among the different classificatory criteria applied by scholars we can, at first glance, recognize some *Abstand* ones (*c*, *e*, *f*, *g*, *h*, and possibly *d*—see Section 2.1.1.1.3), some *Ausbau* ones (*a*, *b*, *i*) that we can define, depending on the passage, as *sociological*, *socio-political* or *geopolitical* ones, and one—particularly interesting for the current research aims—which is, in Posner's own words, some sort of a mix of both (*j*).

1.6. Possible causes for the disagreement between pro-Gallo- and pro-Italo- traditions

With the fundamental distinction of '*Abstand* vs. *Ausbau*' in mind, we can shed light on our classificatory problem. Specifically, three possible issues arise as potential underlying causes for the disagreement between the pro-Gallo- and the pro-Italo- traditions. I will consider them in turn.

1.6.1. FIRST POSSIBLE CAUSE

Proponents of the two groupings may aim at different types of classification, namely pro-Galloauthors aim at a purely *Abstand*-based classification, while pro-Italo- authors, albeit acknowledging the Gallo-Romance *Abstand* profile of Gallo-"Italic", aim at a purely *Ausbau*-based classification. In this case, the 'apparent' disagreement would be due to the questionable¹⁹ polysemic use of the nomenclature (system of labels) in the *Abstand* and in the *Ausbau* sense. For the pro-Gallo- authors, the statement 'Gallo-"Italic" is Gallo-Romance' would mean 'Gallo-"Italic" shares with the 'uncontested'²⁰ Gallo-Romance varieties the *isoglosses* that *define* Gallo-Romance', while for the pro-Italo- authors, the statement 'Gallo-"Italic" is Italo-Romance' would

¹⁸ For the concept of 'roof(ing) language' see Section 2.1.2.1.2.

¹⁹ Anticipating what is presented in more detail in Section 2.2.2, a polysemic (or inertial) use of one nomenclature is questionable because two distinct classificatory criteria applied to the same group of items can result in two different distributions of the items among the sub-groups. In this case, the nomenclature that matches (and informs about) one of the two sub-groupings cannot match (and inform about) the other one. Two distinct nomenclatures are therefore suitable for two distinct classificatory criteria. See more detail in Section 2.2.2.

²⁰ In this thesis, I will refer to the Gallo-Romance nature of Gallo-"Italic" as being 'contested' in the literature. Conversely, the Gallo-Romance nature of French, Occitan and Franco-Provençal can be considered as 'uncontested', since there is general agreement on the matter. For more details on the contestedness of the Gallo-Romance nature of Gallo-"Italic" beyond the scope of this thesis, see Brasca (2021).

mean 'Gallo-"Italic" is currently heteronomous²¹ with respect to Italian/Tuscan'. In this view, the two different groupings would correspond to two intentionally different analytic perspectives, Abstand for the pro-Gallo- studies and Ausbau for the pro-Italo- studies. However, this cannot be a sufficient explanation, because in all the pro-Italo- studies that I am aware of, the vast majority of the varieties considered are described and compared in terms of sharing vs. non-sharing of isoglosses, with their grouping and labelling justified by this criterion (Wartburg 1967; Lausberg 1965; Pellegrini 1975, 1992; Hall 1976). In these studies, as in the ones that propose classifications of pre-literate tribes (e.g. Greenberg 1950, Ehret & Christopher 1981, Campbell 1998, among others; see also example 4 in Section 1.4), the structural description of local non-standard varieties normally precedes and determines their grouping and labelling. This suggests two things. Firstly, that these authors consider it possible to describe and classify the local non-standard varieties purely on the basis of sharing vs. non-sharing of isoglosses, disregarding their socio-political status. Secondly, that this is their specific intention. I therefore exclude the possibility that the aim of the pro-Italo- authors is to make a purely Ausbau-based classification. At the same time, I also exclude the possibility that the pro-Italo- authors aim at a purely genealogical (which is a type of Abstandbased) classification. Indeed, in their writings, they describe Gallo-"Italic" as showing the effects of primitive linguistic changes that they themselves consider relevant in distinguishing Western Romance—and in particular the uncontested Gallo-Romance varieties (French, Occitan, Franco-Provençal)—from Italo-Romance (Wartburg 1967; Lausberg 1965; Pellegrini 1975; Hall 1976). Thus, if the pro-Italo- studies aimed at a purely genealogical classification, they would necessarily classify Gallo-"Italic" as Gallo-Romance.

1.6.2. SECOND POSSIBLE CAUSE

It could also be the case that according to the pro-Italo- scholars, Gallo-"Italic" is genealogically Gallo-Romance, but an *Abstand* (i.e. linguistic) convergence has taken place over the centuries, such that the ancient Gallo-"Italic" became so highly Tuscanised that, in these scholars' opinion, the Gallo-"Italic" geolects of our days are linguistically more similar to some more distant relatives (i.e. to the Italo-Romance geolects) than to the closer relatives that are the uncontested Gallo-

²¹ For more on the concept of 'heteronomy' and 'autonomy', see Trudgill (1992) and footnote 16 above.

Romance geolects. For this reason, the pro-Italo- scholars could believe that, based on the criterion of the current linguistic similarity, Gallo-"Italic" is more properly grouped with the genealogically Italo-Romance geolects, rather than with the rest of Gallo-Romance. This could explain their reference to Gallo-"Italic" as being an "Italo-Romance" variety (often "Northern Italo-Romance"), or as a group of "Italian dialects". In this case, too, the disagreement would be explained by the questionable polysemic use of the nomenclature, but in a different sense from the one seen above (Section 1.6.1). Here the same nomenclature would be questionably used in both *Abstand*-based classifications, whether genealogical or, we could say, synchronological.22 Such a synchronological classification would group geographically contiguous geolects on the basis of their similarity in the historical moment of observation (namely today, for the current interests), regardless of whether their similarity is due to common ancestry (genealogy), or to contact, or to possible unrelated but convergent changes²³ (as related concepts, see "geotypological" in Goebl 1995: 105; "areal typology" in Dahl 2001: 1456; "(geo)typological" in Goebl 2008; see McMahon & McMahon 2005: 2, "taking a synchronic view... classifying languages typologically"; see Section 3.2.7). Therefore, for the pro-Italo- authors, the statement 'Neapolitan²⁴ is Italo-Romance' would mean 'Neapolitan is descended from Proto-Italo-Romance' (here 'Italo-Romance' is a genealogical label), while 'Gallo-"Italic" is Italo-Romance' would mean 'Gallo-"Italic" shows strong signs of linguistic convergence towards Italian/Tuscan due to contact, which relegate its original Gallo-Romance traits to an inherited minority of lexical items' (here 'Italo-Romance' is a synchronological label). Potentially, this interpretation seems to be formally and consistently applicable only to one of the studies I examined, namely von Wartburg (1967). Von Wartburg's (1967) is—to my knowledge—the only 'classical' pro-Italo- study²⁵ that proposes a classification for Gallo-"Italic" formally based on exclusively Abstand criteria, without apparent recourse to Ausbau arguments. Here Gallo-"Italic" seems to be considered Gallo-Romance in terms of genetic development but would have then "become Italian" (Wartburg, 1967: maps 9 and 10, reported

²² The term 'sincronologico/synchronological' was suggested to me by Prof. Guido Borghi, who relayed it in turn from Prof. Walter Berardi's lessons and writings.

²³ See for instance "parallel grammaticalization" in Sobolev (2021).

²⁴ There is no controversy in the scholarly literature about the classification of Neapolitan as Italo-Romance.

²⁵ By 'classical studies' I mean the ones written in the 19th and 20th centuries, and whose proposals of classification for Romance languages are normally considered authoritative in more recent studies (see for instance Posner 1996 and Loporcaro 2009).

below in Figures 3.1 and 3.2) due to a linguistic convergence beginning in the Middle Ages. I will discuss von Wartburg's claim in Chapter 3.

In this case, too, (see Section 1.4.1 for a similar point), it is questionable whether a synchronological grouping can be considered a 'classification', since it seems to yield a mere series of items ranked according to a decreasing (or increasing) order of similarity, rather than a structure of *classes* and *sub-classes*. In this case, too, however, answering this question is not necessary in order to in turn answer the research questions of the current study, where the core concern is which varieties should Gallo-"Italic" be grouped with. For the sake of simplicity, I will therefore also refer to the proposals for the synchronological grouping of Gallo-"Italic" analysed in the present thesis as 'classifications' (in line with the pro-Italo- studies analysed), where 'classification' has the broader meaning of 'grouping items according to a criterion'.

1.6.3. THIRD POSSIBLE CAUSE

Another logically possible cause of the disagreement at issue could be that the pro-Gallo- and the pro-Italo- authors are pursuing the same goal (an Abstand-based classification), but the classification proposed by one of these two traditions is inconsistent. I believe that this interpretation is the correct one for (almost all) the pro-Italo- studies. In Chapter 2, I show that the way in which the grouping is realized in the pro-Italo- studies is inconsistent with the aims of classificatory science. In fact, all these studies—excluding von Wartburg (1967), which as we have seen deserves to be considered separately—mix two ontologically and conceptually independent classificatory criteria (i.e. Abstand and Ausbau) within a formally unidimensional classification. Firstly, they describe and compare the vast majority of the varieties that they consider in terms of sharing vs. non-sharing of isoglosses (i.e. in terms of Abstand), which are then grouped and labelled on this basis. Secondly, they describe Gallo-"Italic" as sharing all the isoglosses that in their own analyses are considered relevant in distinguishing Western Romance, and in particular Gallo-Romance, from Italo-Romance. Thirdly, some sociological or geopolitical arguments are eventually presented in these same studies which, instead of adding a new independent Ausbau dimension to the Abstand one and thereby establishing a bidimensional classification (as in Table 1.2), compete successfully with the *Abstand* criterion and determine the ascription of Gallo-"Italic" to Italo-Romance instead of Gallo-Romance, in a unidimensional classification (as in Table 1.3). I

will call this preponderant number of pro-Italo- studies the 'mixed-criterion tradition', and it is mainly to its criticism that Chapter 2 is devoted.

	Gallo-Romance	Italo-Romance
heteronomous with respect to Italian	Gallo-"Italic", Occitan of	Neapolitan, Sicilian, etc.
	Piedmont, etc.	
heteronomous with respect to French	Occitan of France, etc.	Corsican

 Table 1.2. Bidimensional classification of Romance varieties (here only Gallo-Romance and Italo-Romance are considered).

Gallo-Romance	Italo-Romance
Occitan of France and Piedmont, etc.	Gallo-"Italic", Neapolitan, Sicilian, etc.

Table 1.3. Unidimensional classification of Romance varieties (here only Gallo-Romance and Italo-Romance are considered).

1.7. SCIENTIFIC CLASSIFICATIONS

Classification consists of grouping things according to the type and the number of characteristics that they share (affinity), and placing them in a hierarchical system of categories (grouping), expressing the different degrees of their affinity. Classification also supplies a distinctive name for each group (labelling) (see Simpson, 1945: 1-24; also Bailey, 1994). In scientific research, classifications are informative tools (see Simpson, 1945: 13; also Devitt, 2008: 352; also Bailey, 1994: 12). From the position that an unknown item occupies within a classification, the reader should be able to *derive information* about the characteristics that such item shows and shares exclusively with all the other members of that group. Conversely, a scientist should be able to propose the ascription of a new item to any group of that classification. However, for this to be possible, one classificatory criterion-on whose basis affinity is assessed-needs to be chosen and asserted (see Bailey, 1994; also Goebl 1991) and applied systematically to all the items classified. The classification has to involve, ideally, all the items in the world that present the conditions of applicability of that given criterion-without any a priori exclusion. Indeed, classifications of empirical entities like geolects-which are named taxonomies (Bailey, 1994: 6)-proceed empirically, meaning that the identification of the items to be classified is not decided by *a priori* conceptualisation and categorisation of the world (see Bailey, 1994: 8-9) but rather results empirically, namely a posteriori with respect to their description. Implicitly, each item identified as includable in the classification has to be (previously and) overtly described as such. Since the

taxonomy construction process is empirical, neither the grouping of the items, nor the identification of the groups, nor the hierarchical relationship between the groups are 'defined' by the researcher through an a priori conceptualization. Rather, they are 'identified' by the researcher as they empirically result from—hence logically and chronologically follow—the description and comparison of the classified items. This means that "the processes of taxonomy construction and identification are virtually synonymous" (Bailey, 1994: 9). Additionally, labelling necessarily follows—logically and chronologically—the identification of groups and their hierarchical relationship since it intends to be "distinctive" and *inform unambiguously about the hierarchical relationship* among groups (see Simpson, 1945: 24-26). Since the same set of items can be classified according to different classificatory criteria, and thus yielding distinct classifications (see Bailey, 1994: 3-4; see also Goebl 1991: 342), it seems appropriate that each different classification be *expressed by a distinct nomenclature* if we want the labels to be "distinctive" (see Simpson, 1945: 24-26), and, for the same reasons, that the labels be *'harmoniously' similar in their form* within each nomenclature so that they can be recognized as being members of one nomenclature/classification and not of another one.

In the following chapter, I will show that in each of the pro-Italo- studies analysed, one or some of these principles are not met, and that, for each principle that is not met, the resulting proposals of "classification" suffer from a specific kind of formal inconsistency (that I will also term 'problem'). These formal inconsistencies are the following (tentative names are given in quotes):

- *a.* the 'ontological problem', showing up in two forms, namely the 'category problem' and the 'taxon problem';
- *b.* the 'ad hoc problem';
- *c.* the 'lack of quantitative evidence problem';
- *d.* the 'inertial use of the nomenclature problem';
- e. the 'disharmonious use of the label Italian problem'
- f. the 'a priori exclusion problem'.

The 'ontological' and the 'ad hoc' problems (a and b) are inherent to the practice of mixing *Abstand* and *Ausbau* criteria. They both entail the *loss of the informative power* of the "classification", hence of its scientific utility. The other problems (c, d, e and f) are not inherent to the practice of mixing *Abstand* and *Ausbau* criteria but are in any case recurrent in the literature and have some detrimental effects on classification of Gallo-"Italic". In particular, the 'lack of quantitative

evidence' problem (c) entails a pro-Italo- "classification" that is not supported; the 'inertial nomenclature' problem (d) entails the loss of informativeness for the labels 'Italo-Romance', 'Gallo-Romance' and so forth, hence of the "classification" as a whole, which consequently cannot have scientific utility; the 'disharmonious use of the labels' (e) makes it unclear which of the possible classifications the author is presenting; the 'a priori exclusion' problem (f) entails an incomplete classification that normally—at least in the studies that I analysed—excludes Gallo-"Italic".

All the problems briefly introduced above (a - f) are conceptually distinct but turn out to appear variously combined in several pro-Italo- studies. Importantly, in the cases when the scholar that I am analysing does not provide exhaustive and explicit information about the criterion that s/he is using, the evident inconsistencies encountered in his/her study could be equally interpreted as manifestations of one or another of those problems.

1.8. SUMMARY OF THE THESIS AND RESEARCH QUESTIONS

To conclude this introductory chapter, I will now concisely summarize the structure of the entire thesis, list the problem statements and the related research questions.

The literature unanimously describes Gallo-"Italic" as showing all the linguistic traits that distinguish Gallo-Romance from the other Romance varieties. Nevertheless, while some scholars classify Gallo-"Italic" as Gallo-Romance, some others classify it as Italo-Romance. The labels 'Gallo-Romance' and 'Italo-Romance' are irreconcilable, as they are presented in the literature as being in complementary distribution (i.e. they are mutually exclusive) and, in particular, they are normally used in the family tree model to name two cousin taxa: Gallo-Romance is a Western Romance daughter, while Italo-Romance is an Eastern Romance daughter. Part I of this thesis (Chapters 1 to 3) therefore addresses the following general research questions:

- Why do some scholars classify Gallo-"Italic" as Italo-Romance, notwithstanding their describing it as linguistically Gallo-Romance?
- 2) How can their proposal of classification be useful in advancing knowledge in Romance linguistics?
- *3)* How would Gallo-"Italic" be consistently classified (grouped and labelled), based on linguistic descriptions provided in previous literature?

In the previous sections of Chapter 1, I argued—and in Chapter 2 I will show—that the classificatory disagreement at issue (pro-Gallo- vs. pro-Italo-) can best be understood by applying Kloss's distinction of Abstand vs. Ausbau. I will show that, in their proposed classifications, the pro-Italo- scholars mix the Abstand and the Ausbau criteria and that this is inconsistent with the aims of classificatory science. In fact, following Kloss (1967), the status of Abstand language and that of Ausbau language are defined within two dimensions-namely, according to two variablesthat are ontologically and conceptually independent. Indeed, however a linguistic variety is classified within one of these two dimensions, this does not affect its classification within the other dimension. Therefore, Abstand and Ausbau have to be seen as classificatory criteria of two independent classifications. I argue that, in science, classifications have an *informative function*, and that by employing such a mixed criterion pro-Italo- scholars have provided a flawed "classification" that—as I will exemplify in Chapter 2—is informative neither of the Abstand nor of the Ausbau status of the varieties "classified", hence it is not useful for scientific purposes and should therefore be rejected. The specific effects of the fallacious practice of mixing classificatory criteria are two, which I propose to name the 'ontological problem' and the 'ad hoc problem'. In the previous sections of Chapter 1, I also introduced some further problems that, albeit not inherently linked to the practice of mixing Abstand and Ausbau criteria, are in any case recurrent in the (pro-Italo-) literature and have some undesirable repercussions on the classification of Gallo-"Italic". One of these is the 'lack of quantitative evidence' problem: some scholars refer to the effects of a possible linguistic convergence of Gallo-"Italic" on Italo-Romance as an Abstand argument in favour of a pro-Italo- synchronological classification, but although their claim is quantitative in nature they do not provide quantitative evidence supporting it. Other problems are the 'inertial use of the nomenclature' problem, the 'disharmonious use of the label Italian' problem, and the 'a priori exclusion' problem. In Chapter 2 I will exemplify the ontological and the ad hoc problems—as stated above—and the other problems introduced in Chapter 1, showing how they surface in various scholarly studies. In Chapter 3 I will analyse von Wartburg (1967) as a summarizing example of that part of the pro-Italo- literature—including more recent scholars' work-that refers to the possible effects of convergence as an Abstand argument in favour of the synchronological pro-Italo- stance (see a few lines above). Von Wartburg claims that during the centuries Gallo-"Italic" became linguistically more similar to the bordering Italo-Romance geolects than to the bordering Gallo-Romance geolects. This claim is quantitative in nature but von Wartburg does not provide quantitative evidence supporting it (the lack of quantitative evidence problem).

In Part II of this thesis (Chapter 4), I will test von Wartburg's claim (that I will present in the form of a testable hypothesis and will call 'the post-Wartburg hypothesis', see Section 3.2.8) by means of a quantitative method. As presented above, I will refer to von Wartburg's claim as representative of the more general synchronological pro-Italo- stance. The results will answer the fourth general research question of this thesis:

4) Is present-day Gallo-"Italic" synchronologically grouped with Gallo-Romance or with Italo-Romance?

Finally, in Chapter 5 I will draw the conclusions of the entire thesis. In Chapter 6, I will present the limitations of this thesis and ideas for future research suggested by the results of this thesis.

CHAPTER TWO

FORMAL INCONSISTENCIES IN THE LITERATURE CONCERNING THE CLASSIFICATION OF GALLO-"ITALIC"

In this chapter, I will present and exemplify the different formal inconsistencies (referred to as 'problems') affecting the proposals of pro-Italo- classification that the literature offers (see problems a - f above), starting with those of the 'mixed criterion tradition'.

As presented above, by 'mixed criterion tradition' I refer to the pro-Italo- studies (probably the vast majority of them) where the fallacious practice of mixing the *Abstand* and the *Ausbau* criteria within a formally unidimensional "classification" of Romance geolects is encountered. The problems inherently deriving from the practice of mixing *Abstand* and *Ausbau* classificatory criteria will be presented, discussed, and exemplified in Section 2.1. In particular, the effects of the ontological problem will be exemplified in Section 2.1.1, and the effects of the ad hoc problem will be exemplified in Section 2.2, I will instead discuss and exemplify the problems that, albeit not inherent to the practice of mixing *Abstand* and *Ausbau* criteria, are equally encountered in the pro-Italo- tradition, and add to the ontological and ad hoc problems as reasons for rejecting the pro-Italo- stance. These are the 'lack of quantitative evidence problem', the 'inertial use of the nomenclature problem', and the 'disharmonious use of the label *Italian* problem' (see problem *f* above). As I will argue, this latter problem cannot be defined as proper to the pro-Italo- tradition; however, it has undesirable effects concerning the classification of Gallo-"Italic".

2.1. Issues with the 'mixed criterion tradition'

In this section I will present, discuss, and exemplify the problems inherently connected to the practice of mixing *Abstand* and *Ausbau* criteria into one unidimensional "classification". These are the ontological problem (Section 2.1.1) and the ad hoc problem (Section 2.1.2).

2.1.1. THE ONTOLOGICAL PROBLEM IN ITS TWO FORMS: THE TAXON PROBLEM AND THE CATEGORY PROBLEM

Following Devitt (2008: 356-357), when classifying organisms, two distinct questions are asked and answered:

- *a.* "In virtue of what is an organism [part of the *taxon X* and not of the *taxon Y*]? This is a question about the properties of organisms"; e.g.: "What is it to be a poodle not a bulldog?" Here the question is about the *taxon* of poodles.
- b. "In virtue of what are [the organisms ascribed to the taxon X] a subspecies, a species, a genus, etc.? [This is a question] about the properties of the properties [of organisms]"; e.g.:
 "What is it for poodles to be a subspecies not a species?". Here the question is about the *category* of poodles.

In linguistic classification, these two questions correspond to the following ones:

- a'. In virtue of what is a geolect part of group (taxon) X and not of group (taxon) Y?
- *b'*. In virtue of what is group *X* a *language* and not a *dialect cluster within a language*, or a *group of sister languages*, etc.?

Based respectively on the *Abstand* and the *Ausbau* classificatory criteria and the corresponding meanings of 'language', each of these questions is answered in two different ways.

According to the *Abstand* criterion they are answered as follows:

- a'. A geolect is part of group X in virtue of the fact that it is i) genealogically closer, or ii) linguistically more similar to the geolects included into X than to the ones included into Y; the answers i and ii correspond to the genealogical and the synchronological criteria respectively, which are both *Abstand*-based criteria (see Section 1.6.2).
- b'. Group X is a language in virtue of the fact that its members are linguistically so similar that they are mutually intelligible to a large extent (see Section 4.1.1 on Campbell, 1998/2006). It would be a dialect cluster (and not a separate language) if, despite the particular linguistic similarity among its members, the dissimilarity with respect to other (groups of) dialects would not be such to compromise intelligibility with them.

Instead, according to the *Ausbau* criterion, questions *a*' and *b*' are answered as follows:

a'. A geolect is part of group *X* in virtue of the fact that it is *heteronomous* with respect to the dominant standard variety *x* (like all the other members of *X*), and not to the standard variety

y. It would be part of *Y* if it was heteronomous with respect to the dominant standard variety *y*;

b'. Group *X* is a *language* in virtue of the fact that, regardless of the level of their linguistic similarity and consequent mutual intelligibility, its members are heteronomous with respect to the same dominant standard variety *x*. The *Ausbau* criterion itself does not define dialect 'clusters' since only the direct relation between each local variety and the standard variety is relevant. When dialect clusters are mentioned in *Ausbau*-based (sociolinguistic, sociological) studies, they are normally defined on the basis of *Abstand*.¹ In this sense, group *X* would be a *dialect cluster* if it was not the only *Abstand*-identified group of geolects that are heteronomous with respect to standard variety x.²

In the next sections I will show that the mixed criterion studies *implicitly* or *explicitly* answer each of the two questions above (a' and b') in two different ways—namely following either the *Abstand* or the *Ausbau* criterion—depending on the local geolects they are dealing with. In particular, when dealing with Gallo-"Italic" geolects, the questions a' and b' are ultimately answered according to the *Ausbau* criterion. Answering these questions according to two independent classificatory criteria while compiling a formally unidimensional "classification" entails what I will call the *ontological* problem. The ontological problem in turn shows up in two forms: in the form of what I will call the *taxon* problem when question a' is concerned ('is Gallo-"Italic" part of the Gallo-Romance taxon?'), and in the form of what I will call the *category* problem³ when question b' is concerned (What makes a set of Romance varieties being one

¹ Maybe the concept of *regional koine* could be seen as the *Ausbau* counterpart of the *Abstand*-defined 'dialect cluster'. Indeed, similarly to the dialect cluster, which in the *Abstand* dimension is placed at an intermediary categorial level between *Abstand* language and local geolect, in the *Ausbau* dimension the regional koine is placed at an intermediary categorial level between acrolect (standard/state language) and basilect (local sub-standard variety). In the current study, however, the concept of regional koine is not relevant.

² For the sake of completeness, it should be noted that from an *Ausbau* perspective, the expression 'language X' seems to have at least two distinct meanings which are often compresent in a single scholarly study: 1) the ensemble of all varieties spoken in the geopolitical space where variety x is the literary standard (this is the meaning assumed in bullet point b' above); 2) the literary/official/standard variety x itself. In the next pages of the current thesis, however, I will disregard this fine-grained distinction of 'language' *Ausbau* meaning (1 and 2), and I will consider it sufficient for the current aims showing that—more generally–different concepts (i.e. *Abstand* language and *Ausbau* language) do not get properly distinguished in much of the literature when ascribing some Romance geolects to the various Romance sub-groups, and when deciding what sets of Romance geolects can be attributed the status of 'language'.

³ In Mayr (1982) and Devitt (2008), the word "problem", in the expressions "category problem" and "taxon problem", has a different meaning from the one used in the present thesis. There it basically means 'question' and has no negative connotations; here instead it means an 'epistemological inconsistency' that makes a theory flawed.

'language'? In particular, what makes the set of Cisalpine plus Peninsular geolects being one 'language'?).

The CATEGORY PROBLEM occurs because one *category name* refers to two (or possibly more) different concepts, which are understood and not distinguished in compiling one formally unidimensional "classification". We can observe this issue in the following fictitious example involving animals:

'domestic animals' and 'felis silvestris' (i.e. cat) are two distinct *species* of animals (here the polysemic category name is 'species').

I will show that, in the mixed criterion studies, the *Abstand* and the *Ausbau* meanings of the category name *language* are not distinguished, and this annuls the informativeness of the category name *language* itself, of the category name *dialect*, and the transparency of entire statements and passages, as much as the informativeness of the entire "classification".

The TAXON PROBLEM occurs when, in a unidimensional "classification", some items are ascribed to the group x according to one classificatory criterion, and some other items are ascribed to the group y (or x) according to another classificatory criterion. We can observe this issue in the following example involving known animals and the fictitious unknown animal *lyrphaon*:

wolf and *squirrel* have to be grouped together because they both have mammary glands; on the other hand, *dog* has to be grouped with *canary* and *lyrphaon* in a contrasting group *of the same unidimensional classification (!)*, because it is a domestic animal just as the canary and the lyrphaon are.

Based on these two asserted criteria, one cannot derive from this passage information that is useful for answering the following questions: does *lyrphaon* have mammary glands? In what group shall I locate *cat*? Furthermore, if one found *cat* located in a group of this "classification", one could not work out why it is there and not in the other group. In summary, the taxon problem makes the reader unable to derive from their position in the "classification" any information about unknown animals (e.g. "lyrphaon"), neither from the anatomical, nor from the environmental/ethological standpoint. Furthermore, the taxon problem does not allow the reader to infer in which group to locate known animals (e.g. "cat" in our example above). In Section 2.1.1.2, I will show that this problem appears in some scholarly studies—which exemplify the mixed-criterion tradition—where *Abstand* and *Ausbau* criteria are mixed in a formally unidimensional "classification". In those
studies, some geolects (i.e. the Peninsular ones) are ascribed to the Italo-Romance taxon⁴ based on the *Abstand* criterion, while other geolects (i.e. Gallo-"Italic") are ascribed to the Italo-Romance taxon based on some *Ausbau* criterion. Due to such practices of mixing criteria, the fact that a geolect is ascribed to the taxon Italo-Romance (or to whatever other taxon of the "classification") cannot be informative of its *Abstand* nor of its *Ausbau* nature, hence the "classification" as a whole is arguably not a classification at all.

2.1.1.1. THE CATEGORY PROBLEM IN THE LITERATURE

In this section I will exemplify how the category problem shows up in some scholarly studies. In some of these studies Gallo-"Italic" is explicitly involved.

2.1.1.1.1. THE CATEGORY PROBLEM IN POSNER (1996), 'THE ROMANCE LANGUAGES'

In Posner's work (1996), both aspects of the ontological problem surface, namely the category problem (i.e. the polysemic use of the category name *language*) and the taxon problem (i.e. grouping geolects in a unidimensional "classification" according to irrelated criteria). This characteristic makes Posner's study ideal in introducing the category problem since it allows for it to be compared and contrasted with the taxon problem.

As we have seen (Section 1.5.1), Posner's (1996) Chapter 5 presents the various approaches by which scholars have classified Romance "languages". As an introduction to the topic, Posner answers the question "How many Romance languages are there?" as follows:

1. "An answer... is that there is [1] only one: the languages are all *alike* enough to be deemed dialects of the same language. Another... answer might be [2] 'thousands' – of distinctive *local varieties* – or 'millions of individual *idiolects*. The usual textbook answer is [3] 'ten, or possibly eleven', according priority to putative chronologically early *differentiation from the common stock*, allegedly linked to ethnic differences among the speakers." (Posner, 1996: 189 [emphasis added]).

The words in italic show that all the three possible answers [1, 2, 3] are based on the *Abstand* criterion. However, in the following pages it appears that the final and supposedly exhaustive list of Romance "languages" which results from Posner's review is actually decided on the basis of

⁴ Actually, since we are here focusing on *grouping* and not on *labelling*, it is not relevant how this taxon/group is labelled. We could label it 'taxon K' for instance.

both *Abstand* and *Ausbau* criteria, depending on the "language" considered. Moreover—and this is what makes this Posner's review particularly useful for illustrating the category problem in contrast with the taxon problem—in this single section of Posner's work it can be *simultaneously* seen how *Abstand* and *Ausbau* criteria get mixed up when deciding the ascription of local geolects to the various Romance sub-groups (ingenerating the taxon problem), and when deciding what group can be defined as "language" (ingenerating the category problem). This is because what gets inconsistently mixed in Posner's review of "languages" is not only *Abstand* and *Ausbau* classificatory criteria but also the answers to the two conceptually distinct questions about *taxon* (*a*) and about *category* (*b*):

- *a. Given a classificatory criterion, how did scholars sub-group Romance geolects?* This is a question about *taxa* (see Section 2.1.1);
- b. According to scholars, what groups of geolects can be defined as a "separate language" and what cannot? This is a question about categories (see Section 2.1.1).

That the answers to questions *a* and *b* are not conceptually distinguished and are mixed in Posner's review of Romance language classifications appears in the following examples (2 to 5):

2. "[Occitan and Catalan] *gain general recognition* [*as Romance 'languages'*] mainly because of their *status* as medieval *literary languages* coupled with the *militancy of linguistic propagandists*" (Posner, 1996: 190, [emphasis added]).

These two non-*Abstand* criteria—the literary prestige and the perception of activists—rather than assigning to Occitan and Catalan a place within a taxon in some sort of *Abstand*-based classification of Romance geolects, give them the 'right' itself of being *categorised as* 'languages'. The same thing can be seen also in the following statement by Posner:

3. "The *layman* has no difficulty in *accepting as 'language'* the five that have 'armies and navies..." (Posner, 1996: 189, [emphasis added]);

These above-quoted statements (2 and 3) are of a very different nature with respect to the following one taken from the same review by Posner:

4. "[According to R. Hall Jr.] Proto-Italian is distinguished from Proto-Western *on the basis of* the treatment of clusters like /kt/ (assimilated in Italian but palatalized in Proto-Ibero- and Proto-Gallo-Romance...)" (Posner, 1996: 197, [emphasis added]).

In fact, unlike the statements in 2 and 3, the statement in 4 does not answer the question *To which one of these given sets of varieties can be attributed the status of (i.e. can be categorized as) a 'separate language'*; rather, it answers the question: *How can these geolects be grouped into different linguistic taxa if we consider the different evolutions of /kt/ as a classificatory criterion?* That is, in example 4, the *Abstand* criterion answers the *taxon* question. Furthermore, in the next example 5, instead, the *Abstand* criterion answers the *category* question:

5. "Two of the textbook Romance languages *owe their status* to the whims of a late nineteenth-century linguist, the Italian Graziadio Ascoli...: Rhaeto-Romance... [grouping together Ladin, Romansh and Friulian which were, according to Ascoli,] *originally a unified language, linked closer to French than to the North Italian dialects* with which it is now intertwined..., and Franco-Provençal" (Posner, 1996: 192-194 [emphasis added]).

In example 5, the *Abstand* criterion is at work. Indeed, synthesizing briefly the debate about the possible 'right' of Franco-Provençal to be considered as a (separate) language, Posner mentions "archaic character", "genetic affinity", "closeness in the vocabulary" of the varieties at issue (all Abstand criteria) as relevant factors (Posner, 1996: 194). As a result, what Posner (1996, Chapter 5) provides is not a series of different proposals of classification for Romance geolects, each of which is obtained by applying a different (Abstand or Ausbau) classificatory criterion; rather, it turns out to be a conglomeration of (i.) a series of statements about how scholars have grouped the varieties considered (answering the question about taxon, see example 5 above) plus (ii.) the accumulation of what is traditionally 'categorised as a language', namely 'said to be a language' (answering the question about category), according to a 'salad of criteria', some Abstand and some Ausbau ones. In particular, as far as the question about category is concerned, French, Spanish, Portuguese, Italian, and Romanian are 'said to be languages' because they are "state languages" (Ausbau); Occitan and Catalan are also 'said to be languages', this time because they can exhibit a (prestigious) medieval literature (Ausbau) and because of the militancy of linguistic propagandists (which is an aspect of speakers' *attitudes*)—but they are not "state languages"; *also* Sardinian, Rhaeto-Romance, and Franco-Provençal are 'said to be languages', this time because some linguists recognized for them an independent *Abstand* profile—but they are not "state languages" nor medieval literary languages.

Transposed to the domain of plants, the final and presumably exhaustive list of "languages" which results from Posner's review could be compared to a (fictitious) purportedly exhaustive list of plant

'species' accumulating groups of plants that are 'said to be a species' according to the different meanings of the category name 'species': (1.) some 'plant species' as intended by botanical science,⁵ (2.) some 'plant species' (possibly) categorized and defined as such in gardeners' and florists' catalogues, based on their social/ritual function (e.g. romantic species, funeral species, marriage species, etc.), (3.) some 'plant species' as generically intended in lay people's informal speech. Such a mixed unidimensional "classification" cannot be informative from any of the three different standpoints. Indeed, if one comes across a group of plants that is categorized/defined as a 'plant species' in such a unidimensional "classification", one would not be able to work out according to which of the three meanings of the category name *species* it is being categorized as such. As a consequence, one cannot know what kind of features can be attributed to an item based on its position in the "classification". Being uninformative, a similar "classification" would be useless for scientific (and for other) purposes, and should therefore be rejected, at least from academic texts.

2.1.1.1.2. THE CATEGORY PROBLEM IN TRUDGILL (1992), 'AUSBAU SOCIOLINGUISTICS AND THE PERCEPTION OF LANGUAGE STATUS IN CONTEMPORARY EUROPE'. AN EXAMPLE CONCERNING GALLO-"ITALIC": THE LOSS OF THE INFORMATIVENESS OF THE TERMS "DIALECT" AND "ITALIAN" In Trudgill (1992), some statements cannot be univocally interpreted as a consequence of the fact that, in this study, the author alternately attributes two different meanings to the word "language", namely the *Abstand* meaning in some passages, and the *Ausbau* meaning in some other passages. Trudgill firstly states:

1. "...[I]t is important to recognize the sociolinguistic problems associated with distinguishing between a 'language' and a 'dialect'. As is well known, the concept of a 'language' is *in many cases as much* a political, cultural and historical concept *as it is* a linguistic concept." (Trudgill, 1992: 167 [emphasis added]).

⁵ It seems relevant to me that in biology there is a debate about how a species should/can be defined (i.e. "the species problem"). Indeed, the existence itself of such a debate shows that biology scientists presuppose that there should ideally be only one definition of the category name 'species', shared by the whole biology scientific community, in order to understand what they are talking about when they discuss about 'species'. My point here is that in much linguistic literature, instead, it appears to be normally accepted that different and irreconcilable meanings of the category names 'language' and 'dialect' cohabit even in the same study. In some studies, the two meanings cohabit even in the same paragraph, as I will show in the next section.

Here is an implicit recognition that two distinct conceptual levels or dimensions exist, a "linguistic" (*Abstand*) one and a non-linguistic (*Ausbau*) one. The author immediately continues:

2. "Whether a linguistic variety is to be *perceived as a language* or not *may* have to do with *many other factors in addition to* its purely linguistic characteristics" (Trudgill, 1992: 167-168 [emphasis added]).

Here Trudgill introduces the further concept that it would be the speakers' (or linguists'?) perception that answers the category question, deciding from time to time whether a given set of geolects is allowed to enter the 'category' of "languages", giving more importance now to the *Abstand*, and now to the *Ausbau* criterion. He does not contest the practice of using the same term "language" in order to refer to two such different concepts and, consequently, he does not propose a lexical alternative to disambiguate between the two different concepts (e.g. *Abstand* language vs. *Ausbau* language), and does not propose a distinct classification for each dimension either. Rather, Trudgill only notices that such mixing of criteria, whose alternation is decided by speakers' (or linguists'?) perception, is the normal praxis in the scholarly literature when defining what a language—hence also what a dialect—is. However, Trudgill's stance entails a problem of loss of terminology informativeness, visible in the following examples from the same study. Introducing the concept of "continuum", Trudgill firstly states:

3. "Crucial to an understanding of the nature of *Ausbau* languages is the concept of the geographical dialect continuum... As is well known, on such a continuum, *dialects* – or at least conservative rural dialects – *change gradually* from place to place, with *neighbouring dialects being very similar to one other*" (Trudgill, 1992: 168 [emphasis added]).

The words in italic show that here the author is using the term "dialect" with its *Abstand* meaning. The text immediately continues as follows:

4. "There are many such dialect continua in Europe. For example... The West Romance continuum covers *dialects of* French, *Italian*, Catalan, Spanish, Galician and Portuguese" (Trudgill, 1992: 168 [emphasis added]).

For the reader there is no way to work out what meaning is to be attributed to the term (in italic) "dialects" in the above example 4, whether the linguistic one (*Abstand*) or the sociological one (*Ausbau*). In the immediately preceding sentence (example 3) this term had a clear *Abstand* meaning so, I argue, the reader is likely to go on attributing the same meaning in the immediately following sentence. As a consequence, the reader is likely to assume—or at least s/he cannot

exclude—that the author deems all the varieties that are Abstand varieties of Italian language, namely the varieties that are part of a presumed Italian linguistic continuum, to be part of the Western Romance continuum—standard Italian and Tuscan inclusive, of course. If not, indeed, we would deal with the paradox that only some geolects of an Abstand language-being for this reason closer to the other members of the *Abstand* continuum of that language than to the members of other bordering continua-would be part of a wider Abstand continuum that excludes other geolects of its own language. Instead, however, we know from many other scholarly studies that only the geolects of Northern Italy are considered part of the Western Romance continuum, and not Tuscan nor the other Peninsular geolects, so that only the Ausbau meaning of the words "dialects"—hence of the word "Italian"—is correct in that context, and the correct interpretation of the entire phrase "dialects of Italian" can only be 'local geolects of Abstand language(s) (different from Italian) spoken in Northern Italy, which are heteronomous towards Italian Ausbau language'. What I would like to point out here is that, without previous knowledge about the linguistic geography of Italy, the reader is entitled to erroneously conclude from this passage that Peninsular geolects are part of the Western Romance continuum. Indeed, the reader cannot work out whether the Abstand or the Ausbau meaning of the term "dialects" is in use in that part of the text, since both are normally accepted and alternatively used within the same scholarly text (see examples 1. and 2. above), also by the author of this text himself. Consequently, the terms "dialect" and "Italian" are ambiguous in Trudgill (1992), hence at the very least not informative, or even misleading when, like in this case, both their Abstand and Ausbau interpretations are understood in the same paragraph. In summary, the polysemic use of the word "language" (Abstand and Ausbau) makes the terms "dialects" and "Italian" and the entire Trudgill paragraph not informative and even misleading, and makes the resulting "classification" entirely unusable for scientific purposes; and, for this reason, it should be avoided.

2.1.1.1.3. A SECOND EXAMPLE OF THE CATEGORY PROBLEM IN POSNER (1996)

The normal acceptance in Posner (1996) of both the *Abstand* and the *Ausbau* criteria as being able to decide whether a geolect can be considered a "separate language" makes it impossible to understand statements like the following one:

1. "The inclusion of Sard as a separate language is agreed by most Romanists, on the ground that the island was *cut off* early from the rest of the Romance area." (Posner, 1996: 195 [emphasis added]).

Here, the *Abstand* nature of the arguments provided in favour of one or another classification for Sard is not explicitly expressed. Therefore, it is necessarily unclear what "cut off" means, and whether this possibly geopolitical (*Ausbau*) or/and geographic isolation entails some degree of *Abstand*. Based on other scholarly literature, we can suppose that the author refers to that, but a scholar/student without previous expertise in Romance linguistics has no reasons to infer that the *Abstand* meaning of "cut off" is at work here rather than the mere political-administrative meaning. This is just due to the fact that, in the previous pages of this work (see Section 2.1.1.1.1), it became evident for the reader that Posner accepts as unproblematic the idea that some sets of geolects can be given the status of separate language based on the *Abstand* criterion, while some other sets of varieties can be given that status based on the *Ausbau* criteria should be applied to. In summary, this passage of Posner cannot be informative about the *Abstand* status or *Ausbau* status of Sard.

2.1.1.1.4. A THIRD EXAMPLE OF THE CATEGORY PROBLEM IN POSNER (1996). AN EXAMPLE CONCERNING GALLO-"ITALIC": THE LOSS OF THE INFORMATIVENESS OF THE TERM 'ITALIAN'

When dealing with the description of Gallo-"Italic" varieties, it appears that one of the effects of the polysemic use (*Abstand* and *Ausbau*) of the words 'language' and 'dialect' within a formally unidimensional "classification" of geolects (see Section 2.1.1) is the loss of the informative power of the adjective 'Italian'. An example is found in the preface of Posner (1996). Here the author makes three statements that are mutually irreconcilable just because of the polysemic use (*Abstand* and *Ausbau*) of the words "language" and "dialect" that is made in them:

1. "I have tried to avoid tendentious classification of 'languages' and 'dialects', using, as far as is feasible, geographical nomenclature. Thus, for instance *an Italian dialect (Ital. dial.) is a non-standard variety spoken in Italy...*" (Posner, 1996: xii [emphasis added]).

Here "dialect" means "non-standard", thus its *Ausbau* meaning is in use. In this sense, it is clear that, say, Lombard, Neapolitan, and the Tuscan geolect of Siena are all definable as "Italian dialects" (indeed, they all are "non-standard variet[ies] spoken in Italy"). A few pages later, in the Table "Language names", Posner defines "Italian" as follows:

2. "Italian: the standard and also regional varieties (dialects) of Italy" (Posner, 1996: xii).

So, all the "dialects of Italy"—that Posner has just defined as reported in example 1—are definable as "Italian"; thus Lombard, Neapolitan, and the Tuscan geolect of Siena are all part of "Italian". However, while presenting the criteria at the basis of Robert Hall Jr.'s genealogical classification, Posner states:

3. "Proto-Italian is distinguished from Proto-Western on the basis of the treatment of clusters like /kt/ (assimilated in *Italian* but palatalized in Proto-Ibero- and Proto-Gallo-Romance" (Posner, 1996: 197 [emphasis added]).

Here, it is not the *Ausbau* criterion that discriminates between "Italian" on the one hand and "Proto-Ibero- and Proto-Gallo-Romance" on the other, but rather the *Abstand* one. Now, given that in Hall's—and other scholars'—studies the palatalization of /kt/ is exactly one of the isoglosses said to be shared by Gallo-"Italic"—and not by Peninsular geolects—with Western Romance (Hall, 1976, see Section 2.1.1.2.4 below; also Pellegrini 1975, see Section 2.1.1.2.1 below; von Wartburg, 1967, see Section 3.2.3), there is no way for the reader to work out what meaning the adjective "Italian" has in the above Posner's example 3, where just the sharing of an isogloss is taken as relevant. One cannot work out whether it means *1*) *'Standard* Italian only' or *2*) *'all* (of what Posner calls) the Italian dialects' (namely the geolects spoken in Italy) or *3*) *'some* of (what Posner calls) the Italian dialects' (maybe the Peninsular geolects). So, the term "Italian" loses its informative power. This problem would not exist if the two meanings (*Abstand* and *Ausbau*) of the word "dialect" were kept lexically distinct in Posner's study.

These considerations about the loss of informativeness of the term "Italian" introduce us to the taxon problem, another face of the ontological problem.

2.1.1.2. THE TAXON PROBLEM IN THE LITERATURE

What I have named the 'taxon problem' is conceptually distinct but concomitant with the 'category problem'⁶ (see Section 2.1.1). If this latter consists of keeping the *Abstand* and the *Ausbau* meanings of the category name *language* not distinguished when compiling a formally unidimensional "classification", the taxon problem (see Section 2.1.1) consists of grouping geolects into the various taxa of a unidimensional "classification", applying unpredictably the

⁶ Recall that the category problem and the taxon problem are two faces of the ontological problem (see Section 2.1.1).

Abstand criterion to some geolects and the *Ausbau* criterion to other geolects. It entails the loss of the informativeness of the taxon labels *Gallo-Romance*, *Italo-Romance*, etc. and, as a consequence, of the entire "classification". In the current section I will show how the taxon problem shows up in some mixed criterion studies.

2.1.1.2.1. The taxon problem in Giovan Battista Pellegrini (1975), 'The five linguistic systems of Italo-Romance'⁷

The taxon problem appears, for instance, in Pellegrini (1975). In this study, Pellegrini describes what he names as the "five linguistic systems of Italo-Romance": "1) Northern Italian or Cisalpine, in which I also include Ligurian, Venetan and Istrioto; 2) Friulian; 3) the Southern-Central dialect system...; 4) Sardinian... with the appendix of Corsican; 5) Tuscan (with Tuscanised Corsican)" (1975: 68).⁸ Pellegrini's declared intention is to describe and compare the "five Italo-Romance linguistic systems" according to exclusively linguistic (*Abstand*) criteria:

1. "Here I do not intend... to give priority to Tuscan as a reference point for a classification... It is my intention to equate all five 'Italo-Romance' systems that we can single out of the great variety of our idioms, *since my description takes into account only linguistic facts*." (Pellegrini, 1975: 67 [my translation,⁹ emphasis added]).¹⁰

2. "It is well known the principle that the scripta differentiates itself, and often very much, from the *spoken variety, which is the only thing that we are interested in* in this study." (Pellegrini, 1975: 67 [emphasis added]).¹¹

As for linguistic traits distinguishing Cisalpine from the "other Italo-Romance linguistic systems", Pellegrini mentions: *(1.)* the ancient palatal pronunciation of CA- ([old] Milanese *las k'ávras*

⁷ The same work with the same title (i.e. "I cinque sistemi linguistici dell'italo-romanzo") first appeared in Pellegrini (1973).

⁸ "1) l'italiano settentrionale o cisalpino nel quale includo anche il ligure, il veneto e l'istrioto; 2) il friulano; 3) il sistema dei dialetti 'centromeridionali'...; 4) il sardo... con l'appendice del corso; 5) il toscano (col corso toscanizzato)."
⁹ In this and the next sections, all the English translations from the original Italian, French, and Spanish passages are mine.

¹⁰ "In questa sede non intendo... dare la preminenza al toscano come punto di riferimento per una classificazione... È mia intenzione di porre sullo stesso piano tutti e cinque i sistemi 'italo-romanzi' che si possono enucleare dalla grande varietà dei nostri idiomi, poiché la mia descrizione tiene conto unicamente di fatti linguistici."

¹¹ "È risaputo il principio che la scripta si diversifica, e sovente con uno stacco assai rilevante, dal parlato che è l'unica realtà che qui ci interessa."

['cavras]),¹² (2.) the retention of Latin final -*s* and (3.) the retention of the Latin clusters with L (*plan, klaf, blank, etc.*) (1975: 69). Among other "phonetic phenomena that are characteristic of this system", Pellegrini mentions: "*a*) the lenition of voiceless intervocalic consonants, including - *s*-; *b*) degemination...; *g*) -CT- > *it* and eventually \check{c} ([tʃ]) in Lombardy; *h*) loss of atonic vowels; *i*) "mixed vowels" \ddot{u} and \ddot{o} ([y, \emptyset]); *l*) sharp contraposition between short and long vowels and possible formation of falling diphthongs from the latter; ..." (1975: 69-71, [IPA characters added]). In line with this description, Pellegrini asserts the Western Romance identity of Cisalpine:

3. "That Northern Italy belongs, and even more has belonged, to the 'Western Romania' is a truth admitted by all the serious scholars, according to a well-known division supported by von Wartburg (the so-called La Spezia-Rimini line)." (Pellegrini, 1975: 69).¹³

Pellegrini is also clear about the Gallo-Romance linguistic profile of Cisalpine:

4. "Upper Italy (or Cisalpine) certainly underwent the Gallic influence at various degrees, even in its marginal areas, Ligurian, Venetan and Istrian. ... At least until the eleventh century and even later, it is closely connected to the great Gaul both politically and linguistically. It is certainly not erroneous to think of a large Gallo-Romania which also includes upper Italy (*Italia annonaria*) in addition to *Rhaetia*..." (Pellegrini, 1975: 68 [italic original]).¹⁴

Referring to the Lepontic language ("Leponzio"), which was spoken in Lombardy, Eastern Piedmont, and Canton Ticino in Switzerland before and during the first centuries of the Romanization,¹⁵ currently and unanimously recognised as a Celtic language (Lejeune, 1971; Borghi, 2009, 2013), and attested since the 7th century BC (Maras 2014, cited in Stifter, 2020), he states:

¹² See also Videsott 2001.

¹³ "Che l'Italia superiore appartenga, e ancor più sia appartenuta, alla 'Romània occidentale' è invece una verità ammessa da tutti gli studiosi seri, secondo una ben nota divisione cara al von Wartburg (con la cosiddetta linea Spezia-Rimini)."

¹⁴ "L'Italia superiore (o Cisalpina) ha certamente risentito in misura più o meno evidente dell'influsso gallico anche nelle sue aree marginali, liguri, venete e istriote. ...[P]erlomeno sino all'undicesimo secolo ed ancora dopo, risulta strettamente collegata con la grande Gallia sia sul piano politico, sia su quello linguistico. Non è di certo erroneo pensare a un'ampia Gallo-Romània che include oltre alla *Raetia* anche l'Italia superiore (l'*Italia annonaria*)..."

¹⁵ Concerning the survival of Celtic varieties in the Cisalpine, up to the end of the 4th century A.D., see Borghi 2006: 87-93.

5. "This epigraphic language is linkable with Celtic (perhaps it is the speech of a first wave of Celts¹⁶...)" (Pellegrini, 1975: 58).¹⁷

Then, referring to the following Celtic waves of immigration, he continues:

6. "Starting from the fifth-fourth century BC … Upper Italy is invaded by an authentic tide of Celtic tribes … The Gauls are likely to have Celticized almost all of Upper Italy before the Romanization." (Pellegrini, 1975: 58).¹⁸

He also explicitly excludes the possibility of representing the whole of Italy as a genealogicallinguistic *taxon*:

7. "It is certainly a great heresy to reconstruct a 'proto-Italian' valid for all the geographically and politically Italian regions, and then articulated and branched into the various vernaculars of our nation; unfortunately, this view is still implicit in some studies and even in some recent ones..." (Pellegrini, 1975: 65-66).¹⁹

8. "... it is absolutely impossible to reconstruct a common unitary scheme, a pan-Italian diasystem or a 'Proto-Italian': so deep are the differences between the various regions." (Pellegrini, 1975: 86).²⁰

In statement 8, we see an implicit comparison with the other Romance sub-groups (Gallo-Romance, Ibero-Romance, etc.), for which it would indeed be possible "to reconstruct a unitary scheme". Indeed, the missing "pan-Italian" linguistic traits, to which Pellegrini refers, certainly cannot be pan-Romance traits, but rather some traits which should be shared *exclusively* by what Pellegrini names "the five Italo-Romance linguistic systems", and could distinguish all of them *as a whole* from the other Romance sub-groups. In other words, the "such deep differences among the regions [of Italy]" can only be intended as so deep that some of them are considered relevant in contrasting Gallo-Romance or Ibero-Romance with Italo-Romance, and this equates to saying that

¹⁶ However, see Borghi (2013) for a possible indigenous origin of a Celtic language in Lombardy and other bordering areas.

¹⁷ "Tale lingua epigrafica è collegabile col celtico (forse rappresenta la parlata di Celti di una prima ondata...)"

¹⁸ "A partire dal quinto-quarto secolo a.C. ... l'Italia superiore è invasa da una autentica marea di tribù celtiche... I Galli hanno verosimilmente celtizzato quasi tutta l'Italia superiore prima della romanizzazione."

¹⁹ "È certamente una grande eresia ricostruire un 'proto-italiano' valido per tutte le regioni geograficamente e politicamente italiane, poi articolatosi e ramificatosi nelle varie favelle della nostra nazione; tale opinione è purtroppo ancora adombrata in alcuni scritti anche recenti..."

²⁰ "... è assolutamente impossibile ricostruire uno schema comune unitario, un diasistema panitaliano o un 'protoitaliano': tanto profonde sono le differenze tra le varie regioni."

the label "Italo-Romance"—as intended by Pellegrini, namely as corresponding to the set of Cisalpine plus Peninsular geolects—does not represent any *Abstand* taxon.

Moreover, Pellegrini seems to exclude the possibility that the heteronomy of Cisalpine and Southern Italian varieties could have led them to a strong linguistic convergence upon Italian/Tuscan literary language such as to make them mutually intelligible:

9. "It is well known that the mutual understanding between a Northern Italian and a Southern Italian is almost always impossible when both express themselves in local and archaic linguistic means which are not influenced by the Italian koine. I could cite many testimonies of this." (Pellegrini, 1975: 64-65; see also 1970: 222).²¹

This being the case, it is unclear what the term "Italo-Romance" means in Pellegrini (1975), namely, what it is informative of. Deviating from his declared intent to stick to *Abstand* considerations (see examples 1 and 2 above), Pellegrini answers this question attributing an exclusively *Ausbau* meaning to the label "Italo-Romance", as follows:

10. "I must first clarify, once and for all, that by 'Italo-Romance' I refer to the various idioms of the Peninsula and the Islands that *have long since chosen Italian as their 'guide-language'*." (Pellegrini, 1975: 56 [emphasis added]).²²

In his footnote 4, Pellegrini clarifies further the above statement:

11. "It is basically an old criterion followed, for example, by F. Diez,²³ 'Grammatik der romanischen Sprachen' (1st ed. 1838); see also Monteverdi... [who states]: 'As Italian is the literary language of Tuscany, Lombardy and Sardinia, in Diez's contribution *very different dialects are grouped together* such as Tuscan, Lombard and Sardinian'." (Pellegrini, 1975: 57, footnote 4 [emphasis added]).²⁴

²¹ "È risaputo che la comprensione reciproca tra un Italiano del Nord e uno del Sud, qualora ambedue si esprimano in un mezzo linguistico locale e arcaico non influenzato dalla koiné italiana, risulta quasi sempre impossibile e di ciò potrei citare ampie testimonianze."

²² "... con 'italo-romanzo' alludo alle varie parlate della Penisola e delle Isole che hanno scelto, già da tempo, come 'lingua guida' l'italiano."

²³ Friedrich Christian Diez (1794-1876) represents the pre-scientific and geopolitical approach to the classification of Romance languages, before G.I. Ascoli inaugurated the new linguistic approach. As Pellegrini points out: "the very simple classification proposed by F. Diez... *includes only official languages* with the sole exception of Provençal" (Pellegrini, 1992: 279 [emphasis added]).

²⁴ "È sostanzialmente un vecchio criterio seguito ad esempio da F. Diez, *Grammatik der romanischen Sprachen* (Ia ed. 1838); vedi anche Monteverdi, *Avv.*, p. 78: 'Essendo l'italiano la lingua letteraria così della Toscana, come della Lombardia, come della Sardegna, risultano nell'opera del Diez raggruppati insieme dialetti diversissimi come il toscano, il lombardo e il sardo.'"

As in example 8, in Monteverdi's expression "*very* different dialects" as reported in example 11, we see the acknowledgment that they are 'dialects that do not share any traits that are not shared by the dialects of other Romance sub-groups'. We can expect that also, say, Portuguese and Rumanian dialects would be said to be "*very* different" if one tried to include the Rumanian ones within the Ibero-Romance group.²⁵ However, it is not normally stressed that these dialects are "*very* different" when they are analysed as members of the wider Romance group. So, it seems that the sharing of isoglosses is not the criterion that induces Pellegrini to group the "five linguistic systems" together as exclusive members of "Italo-Romance". Indeed, the following statements confirm this:

12. "We should not have any shame in saying that the Italian linguistic unity, and indirectly the political one, is almost exclusively the work of *men of letters*... and especially of the great authors of the fourteenth century... [Their] language, clearly based... on Florentine... differed profoundly, as we have repeatedly stressed, from the other peninsular and insular linguistic systems." (Pellegrini, 1975: 65 [italic original]).²⁶

13. "...the standard language [Italian/Tuscan]... encountered serious difficulties to its spread in the different regions before the twentieth century. Therefore, the Italian linguistic unity (a relative unity!) is, since the thirteenth century, an *eminently literary* fact, confined to a few high and privileged classes of our country." (Pellegrini, 1975: 66 [italic original]).²⁷

The cluster of varieties that the author labels as "Italo-Romance" is therefore carved out of the Romance family according to a *non-linguistic* criterion (*Ausbau*), while a *linguistic* criterion (*Abstand*) guides the internal sub-grouping of "Italo-Romance" itself. In the resulting implicit "classification" of Romance geolects, both the labels "Gallo-Romance" and "Italo-Romance" are *devoid of informative power* (see Simpson, 1945), so the "classification" as a whole is not useful for scientific purposes. To exemplify this, let us say that we come across the following (fictitious) statement about a Romance variety that we do not know: "the Xese geolect is Italo-Romance".

²⁵ Portuguese is part of Ibero-Romance.

²⁶ "Qui non bisogna avere nessun pudore nell'affermare che l'unità linguistica italiana, e indirettamente quella politica, è opera quasi esclusiva di *litterati*... e in prima linea dei grandi trecenteschi il cui linguaggio ha trovato subito fortunati imitatori. Tale linguaggio, di fondamento chiaramente toscano, anzi fiorentino... divergeva profondamente, come abbiamo più volte sottolineato, dagli altri sistemi linguistici peninsulari e insulari."

²⁷ "[la] lingua standard o della scrittura... incontrò serie difficoltà per diffondersi nelle varie regioni prima del Novecento. L'unità linguistica italiana è perciò fin dal tredicesimo secolo (unità relativa!) un fatto *eminentemente letterario*, relegato a pochi strati più elevati e privilegiati del nostro Paese."

From this statement *we cannot derive* linguistic/genealogic information at all about Xese if the author mixes *Abstand* and *Ausbau* as in Pellegrini (1975). Indeed, Xese could show either Eastern Romance linguistic traits (as in the case of Sicilian) or Western Romance ones (as in the case of Gallo-"Italic"). And, if we read the following, "the Yese geolect is Gallo-Romance", *we cannot derive* sociological nor geopolitical information about Yese from this statement. Indeed, Yese could be acknowledged as genealogically Gallo-Romance but heteronomous with respect to Italian (as in the case of the Occitan of Piedmont).

2.1.1.2.2. THE TAXON PROBLEM IN PELLEGRINI (1992), 'IL CISALPINO E L'ITALO-ROMANZO'

The same discrepancy that we have just observed in Pellegrini (1975) also shows up in Pellegrini (1992). Firstly, the author states his intention to provide a taxonomic collocation of Cisalpine geolects within the Romance domain (Pellegrini, 1992: 279) on the exclusive basis of their linguistic (*Abstand*) features, disregarding their sociological (*Ausbau*) status (Pellegrini, 1992: 282, 293). Similarly to Pellegrini (1975) (see Section 2.1.1.2.1 above), here are "some important isoglosses" which define the "Cisalpine idioms" (Pellegrini, 1992: 286): (*1.*) retention of Latin final -S; (*2.*) retention of clusters with L (PL, BL, FL, CL, GL); (*3.*) palatalization of CA, GA²⁸; (*4.*) development of \hat{a} [stressed a] into \hat{e}/\hat{e} [ϵ/e], "currently still very common in Padania/tuttora assai comune nella Padania"; (*5.*) palatalization of \bar{u} in \bar{u} [y] and presence of \bar{o} [ϕ] (*6.*) palatalization of CT > *it* [jt] or \check{c} [tf] (*lait*, *lač*); (*7.*) weakening of voiceless intervocalic (*-c->-g-*, *-p->-v-*, *-t->-d-*); (*8.*) degemination; (*9.*) absence of "syntactic strengthening"; (*10.*) deletion of atonic vowels. In line with the description above, Pellegrini has no doubt about the original linguistic autonomy of Cisalpine with respect to Peninsular Italy (Pellegrini, 1992: 273, 274, 281-282, 294). Here are some examples:

1. "[Cisalpine] is the Upper or Northern Italy, which *since pre-Roman and Roman era shows its own historical-linguistic autonomy...*" (Pellegrini, 1992: 273, [emphasis added]).²⁹

²⁸ See also Videsott 2001.

²⁹ "In altre parole, si tratta dell'Italia superiore o settentrionale che fin dall'epoca preromana e romana presenta una sua indipendenza storico-linguistica..."

2. "[It is] the Roman history itself that entitles us to consider the Cisalpine as *detached from Italy* for a long time and with the spread of a Latin which was already differentiated and more recent, as was the one introduced into [Transalpine] Gaul." (Pellegrini, 1992: 294, [emphasis added]).³⁰

Pellegrini agrees with Matteo Bartoli and Graziadio Ascoli in considering the La Spezia-Rimini line "a particularly sharp demarcation" within the generally smooth continuum of "Romania continua" (Pellegrini, 1992: 285, 286). For the present aims, the following Pellegrini statement concerning the Massa-Senigallia ("La Spezia-Rimini") line should be emphasised:

3. "*On the other hand*, what strikes one as surprising [in comparison with the generally smooth Romance continuum] is the very sensitive difference that often occurs in strips of rather narrow areas, where many isoglosses run almost together, determining in Italy *(and if we want in the whole Romania)* two types of very different speeches..." (Pellegrini, 1992: 285 [emphasis added]).³¹

The sentence in italic in example 3, put in brackets by Pellegrini, which make it seem to have been written *en passant*, is, on the contrary, of utmost importance from the classificatory standpoint. In fact, "if we want" to consider the referred Massa-Senigallia line as dividing the whole Romania—rather than Italy alone—"in two very different" linguistic areas, then we are stating that some linguistic reasons exclude the geolects of the northern part of Italy from the group to which the Peninsular geolects are ascribed, and ascribe them to 'the other group', with the other Western geolects of "Romania continua". And indeed, the author is clear about the fact that Cisalpine shares its genealogical development with uncontested Gallo-Romance:

4. "... [I]t is obvious that at the diachronic level the 'Gallo-Italic' dialects also offer *more relevant* '*Gallo-Romance' features*." (Pellegrini, 1992: 279 [emphasis added]).³²

In this regard, in many points, Pellegrini explicitly refers to the Celtic ethno-linguistic substrate of Cisalpine, the ancient "Gallia Cisalpina" (Pellegrini, 1992: 272, 275, 278, 294). He also refers to the "clearly identifiable Celtic place names" (1992: 277-278) in the Cisalpine area and Celtic "substrate" effects in Cisalpine geolects (Pellegrini, 1992: 275, 294; see also 279, 286):

³⁰ "[È] la stessa storia romana che ci autorizza a ritenere la Cisalpina a lungo distaccata dall'Italia e con la diffusione di un latino già differenziato e più recente, come del resto era quello introdotto nella Gallia [transalpina]."

³¹ "Colpisce invece la sensibilissima differenza che si attua spesso in strisce di aree piuttosto ristrette, ove corrono quasi insieme parecchie isoglosse, determinando in Italia (e se si vuole nella Romània intera) due tipi di parlate assai diverse…"

³² "[È] ovvio che sul piano diacronico anche i dialetti «gallo-italici» offrono tratti più rilevanti di «gallo-romanzo»."

5. "A particular Latin was formed in the meeting between vanquished [Cisalpine Celts] and winners [Romans], which is at the basis of the neo-Latin speeches of Northern Italy...". (Pellegrini, 1992: 279).³³

Moreover, as Giacomo Devoto points out, during the first centuries AD, the Cisalpine maintained a privileged link with Transalpine Gaul, participating in some linguistic innovations possibly coming from West (i.e. from Transalpine Gaul) (Devoto, 1944, cited in Pellegrini, 1992: 294). Surprisingly, however, all throughout his study, Pellegrini explicitly defines Cisalpine varieties as "Italian dialects" (Pellegrini, 1992: 279, 283, 295) and as part of "Italo-Romance" (Pellegrini, 1992: 286; implicitly also at pages 284 and 285). Here are just two of several possible examples:

6. "...even within a group of *Italian dialects* such as those we are briefly investigating, namely the Cisalpine ones, it is not always easy to determine net boundaries..." (Pellegrini 1992: 283 [emphasis added]).³⁴

7. "In a first and fundamental subdivision of the *Italo-Romance idioms*... one could state that the Cisalpine is globally opposed to all the other speeches..." (Pellegrini, 1992: 286 [emphasis added]).³⁵

The evident discrepancy between Pellegrini's *Abstand description* of Cisalpine as Gallo-Romance on the one hand and its *classification* as Italian/Italo-Romance on the other hand is overtly faced by Pellegrini in the concluding section as follows:

8. *"However, despite* the differences [between Cisalpine and Peninsular geolects] on which I have also constantly insisted upon in this contribution, judging Cisalpine as foreign to Italy does not seem to me to be correct, and I do not think that «Italian Cisalpine» is an incorrect definition." (Pellegrini 1992: 295 [emphasis added]).³⁶

In the lines following the statement in example 8, none of the reasons that Pellegrini presents in order to support the classification of Cisalpine as Italian/Italo-Romance are of *Abstand* nature. Rather, they are *geopolitical (Ausbau)* in nature, as we can see in the next two examples:

³³ "Si è venuto formando nell'incontro tra vinti [galli cisalpini] e vincitori [romani] un latino particolare che sta alla base delle parlate neolatine italiane settentrionali..."

³⁴ "...anche all'interno di un gruppo di dialetti italiani quali quelli che stiamo indagando sinteticamente e cioè i cisalpini, non è sempre agevole determinare dei confini netti..."

³⁵ "Tra una prima e fondamentale suddivisione degli idiomi italo-romanzi... si potrebbe affermare che la Cisalpina si oppone globalmente a tutte le altre favelle..."

³⁶ "Non mi pare comunque corretto, nonostante le differenze sulle quali anche qui abbiamo continuamente insistito, giudicare la Cisalpina estranea all'Italia e che sia una definizione scorretta accennare ad un «italiano cisalpino»."

9. "[The reason] comes *from history*. We know well how *the Alpine borders of Italy were conceived* from the second century BC, as the historian Polibio or Cato explicitly declare." (Pellegrini 1992: 295 [emphasis added]).³⁷

10. "Then it follows *the political aggregation... the extension of citizenship* ... to end with 'Italia Annonaria' and Milan as its capital city." (Pellegrini 1992: 295 [emphasis added]).³⁸

At this point, overtly deviating from his initial explicit intentions, Pellegrini no longer seems to consider the isoglosses (*Abstand*) characterising "the natural and spontaneous idioms" (Pellegrini, 1992: 282, see also 293) as relevant for classification, and veers his interest towards the *Ausbau* argument of the "literary Italian koine", which suddenly and surprisingly acquires classificatory relevance instead of *Abstand*:

11. "It is the 'literati' who contribute to shape the national 'koine', and above all the well-known great Tuscan literary men of the fourteenth century who constitute a paradigm which is soon imitated. (Pellegrini 1992: 295) ... And from the writing we will then pass—but very slowly and after several centuries, up to our days—to the more or less correct adoption of a common language, even in daily oral use..." (Pellegrini 1992: 296).³⁹

Therefore, the Italo-Romance/Italian nature of the Romance geolects historically spoken in the Cisalpine appear in Pellegrini (1992) to depend exclusively on these non-*Abstand* criteria: (1.) because they are spoken in a territory that was already called 'Italy' in the 2^{nd} century BC by Greek and Latin writers, (2.) because such territory got politically aggregated to Peninsular Italy during the Roman Empire, (3.) because they share with Peninsular geolects a literary koine.

The last paragraph of Pellegrini's (1992) Chapter 12 summarises the fluctuating, doubtful, and problematic compresence of the two conflicting ascriptions (*Gallo-Romance* and *Italo-Romance/Italian*) of Cisalpine geolects:

³⁷ "Anche qui gli insegnamenti arrivano dalla storia. Ben sappiamo infatti quali erano concepiti i confini alpini dell'Italia fin dal secondo secolo a.C., come ci dichiarano espressamente lo storico Polibio o Catone."

³⁸ "Segue poi l'aggregazione politica... l'estensione della cittadinanza... per giungere all'Italia annonaria con capitale Milano."

³⁹ "Sono i 'literati' che contribuiscono alla formazione della 'koinè' nazionale e soprattutto i noti grandi letterati toscani del trecento, che costituiscono un paradigma ben presto imitato. (1992: 295)... E dalla scrittura si passerà poi – ma assai lentamente e dopo vari secoli, sino ai nostri giorni – all'adozione più o meno corretta di una lingua comune, anche nell'uso orale quotidiano..."

12. "This ancient Lombard speech [the Milanese of the 11^{th} and 12^{th} century] was sometimes defined by the label *lain*... from *ladin* < 1 a t i n u s... [This term] obviously refers to the Lombard speech and perhaps to Cisalpine speech in general; however, I do not think it is a gross mistake to consider it an equivalent of <u>'Italian</u>', although it is obvious that we are dealing with a northern Italian that is <u>very distant from</u> <u>Tuscan</u>, and even more so at that time. On the other hand, I do not believe that *la(d)ino* could c o m m - o n l y be understood as «Italian», since this concept was undoubtedly unknown." (Pellegrini, 1992: 293 [italic original, underline added by me as emphasis]).⁴⁰

Then Pellegrini immediately continues with a significant statement:

13. "And it would not be so wrong to consider it [lain] an equivalent of «Cisalpine», of «*Gallo-Romance Italian*»." (Pellegrini 1992: 293 [emphasis added]).⁴¹

In this last statement, "Italian" and "Gallo-Romance" emerge as not being mutually exclusive taxa/labels in Pellegrini's terminology. One could conclude that, in Pellegrini (1992), the labels "Italian/Italo-Romance" on the one hand and "Gallo-Romance" on the other hand, knowingly refer to two independent perspectives of description/analysis of Cisalpine, respectively to the *Ausbau* and to the *Abstand* one. However, Pellegrini does not propose a conciliating bidimensional *Abstand-Ausbau* classification (see Sections 1.5 and 1.6.3), rather he prefers to insist on the definitive unidimensional 'Italian' nature of Cisalpine, firstly trying doubtfully to provide some *perceptual* reasons (which are non-*Abstand* reasons in nature):

14. "And from here we should develop a whole series of considerations about the possibility that the northern Italian populations had a *conscience* of belonging to a more or less *different* ethno-linguistic group *from the Tuscan Italian one*⁴² (which was perhaps not even known at certain levels)." (Pellegrini 1992: 293 [emphasis added]).⁴³

⁴⁰ "Tale parlata lombarda antica [il milanese dei secoli XI e XII] è stata definita a volte con l'etichetta di *laìn...* da *ladin* < 1 a t i n u s... [termine che] si riferisce ovviamente alla parlata lombarda e forse della Cisalpina in generale; ma non credo che sia da considerare un grossolano errore ritenerlo un equivalente di 'italiano', anche se è ovvio che si tratta di un italiano settentrionale lontanissimo dal toscano, e ancor di più in quell'epoca. Non credo d'altro canto che p o p o l a r m e n t e *la(d)ino* potesse esser inteso come «italiano» dato che tale concetto era indubbiamente sconosciuto." ⁴¹ "E non sarebbe tanto errato ritenerlo un equivalente di «Cisalpino», *di «italiano gallo-romanzo»*."

⁴² Note that here Pellegrini arbitrarily assumes as 'default' a self-perception of "belonging to the Tuscan Italian ethnolinguistic group" on the part of Cisalpine speakers, so that one would arbitrarily be asked to demonstrate the opposite. In the part in brackets however, he immediately expresses doubts about his claim itself.

⁴³ "E di qui si dovrebbe sviluppare tutta una serie di ragionamenti circa la coscienza o meno delle popolazioni italiane settentrionali di appartenere ad un gruppo etnico-linguistico diverso più o meno dall'italiano toscano (che non era forse nemmeno conosciuto a certi livelli)."

Finally the author thinks to solve the intricate problem by delegating to the "historians" and "literati" the decision of a unidimensional "classification" for Cisalpine:

15. "This conscience could not concern the lower classes, which were interested in anything other than their glotto-ethnic affiliation. *And then [the decision of] the definition and extension lie[s] only with the historians, possibly with the 'literati'* [literary men]." (Pellegrini 1992: 293 [emphasis added])⁴⁴.

I conclude that in the above-quoted last section, Pellegrini (1992) renounces his original explicit intent to classify Cisalpine on the basis of exclusively *Abstand* criteria (see Pellegrini, 1992: 279-280, 282, 293 cited above) and proposes to ascribe Cisalpine to the Italian/Italo-Romance group on the basis of *geopolitical* and *socio-cultural* criteria. Therefore, like in Pellegrini's work of 1975, in his 1992 work the author mixes the *Abstand* and the *Ausbau* criteria in a formally unidimensional "classification". What results is an implicit "classification" of Romance geolects that is informative neither from the *Abstand* nor from the *Ausbau* point of view, and which is consequently not helpful for scientific purposes. Similarly to what was presented in Section 2.1.1, we could transpose such a "classification" of Romance geolects to the domain of animals as follows:

wolf and *squirrel* have to be grouped together because they both have mammary glands; on the contrary, *whale* has to be grouped with *codfish* in a contrasting group *of the same unidimensional classification (!)*, because it lives in the sea, just as the codfish does.

Such a "classification" would not indicate to the reader as to what sub-group *dolphin* would be located in, *nor any other animal*. Furthermore, if the reader would find *dolphin* located in a certain sub-group of this "classification", s/he would not be able to derive any information from it about that (or any other) animal, neither about anatomy nor about its living environment. In other words, the entire "classification" (like each label) would not be informative, hence it would not be useful for scientific purposes and should therefore be rejected.

2.1.1.2.3. PELLEGRINI AND THE EXCEPTIONAL "DIVERSITY OF THE 'ITALO-ROMANCE' IDIOMS"

In view of the considerations presented in the two previous Sections 2.1.1.2.1 and 2.1.1.2.2, it is interesting to focus on some of Pellegrini's (1975) statements about what follows:

⁴⁴ "Tale coscienza non poteva riguardare le classi popolari interessate a ben altro che alla loro appartenenza glottoetnica. Ed allora la definizione e l'estensione spetta unicamente agli storici, eventualmente ai 'literati'."

1. "...[the exceptional] diversity of the 'Italo-Romance' idioms, which has no analogue parallels in the areas of Romania and of Europe in general." (Pellegrini, 1975: 56]).⁴⁵

Pellegrini cites Clemente Merlo (1937) and quotes Graziadio Ascoli, both of whom agree about the 'exceptional nature' of Italy in this respect:

2. "...the Neo-Latin dialectal varieties that cohabit in Italy differ from each other far more significantly than, for example, the various English or Spanish dialects do..." (Ascoli, Italia dialettale p. 99, quoted in Pellegrini, 1975: 56, note 2).⁴⁶

Pellegrini quotes Gerhard Rohlfs, who also agrees about this particular 'internal' diversity:

3. "Among the European nations, Italy certainly enjoys the privilege of being *the most fragmented* country in its dialects." (Rohlfs, L'Italia dialettale (dal Piemonte alla Sicilia), 1967, quoted in Pellegrini, 1975: 56 [emphasis added]).⁴⁷

At one point, Pellegrini asks himself what could be

4. "...the *causes* of the deep differences mentioned [among "the various speeches of the Peninsula"]" (Pellegrini, 1975: 57 [emphasis added]).⁴⁸

What I would like to point out is that statements 1-4 are justified only if one presumes that all of Pellegrini's "five linguistic systems of Italo-Romance" are *the exclusive descendants of a common ancestor* (i.e. presumably of Proto-Italo-Romance), as, say, the Ibero-Romance varieties are normally intended—as such, to be the exclusive descendants of Proto-Ibero-Romance.⁴⁹ Only in this case would it be logical to ask what are "the *causes* of [such] deep differences" (see example 4), or talk about a "*fragmented* country", as Rohlfs does (see example 3), in that only something that is originally united and homogeneous can be thought of as divisible and diversifiable.

⁴⁵ "...varietà dei linguaggi 'italo-romanzi', che non trova paralleli analoghi nelle aree della Romània, e in genere dell'Europa..."

⁴⁶ "...le varietà dialettali neolatine, che nell'Italia convivono, differiscono tra di loro assai più notevolmente che non differiscano, a cagion d'esempio, i vari dialetti inglesi o gli spagnuoli..."

⁴⁷ "Fra le nazioni europee l'Italia gode il privilegio di essere, certamente, il paese più frazionato nei suoi dialetti."

⁴⁸ "[1]e cause delle accennate profonde differenze".

⁴⁹ In this case, the "five linguistic systems of Italo-Romance" would constitute, as a whole, one of the "exhaustive and mutually exclusive classes" (Bailey, 1994: 3) which form the Romance domain, along with Gallo-Romance, Ibero-Romance, etc.

However, we have seen that Pellegrini excludes this possibility (Section 2.2 examples 4 and 5), justifying the classification of Cisalpine as Italo-Romance only on *Ausbau*-based arguments.

Therefore, we can conclude that Pellegrini would have no reasons for stressing an alleged 'exceptional fragmentation' of Italy or 'exceptional diversity' (see example 5 below) of what he defines "Italo-Romance idioms", because he does not acknowledge them as a unit from the genealogical/linguistic standpoint. We can expect that zoologists would also be surprised with the 'exceptional zoological diversity' of the class 'mammals' if they ascribed *canaries* and *goldfish* to that class 'because they are domestic animals just like the *cat* is'.

The discrepancy between, on the one hand, Pellegrini's awareness of the lack of such original linguistic unity and, on the other, his classifying Cisalpine as Italo-Romance, is summed up in the following example taken from Pellegrini (1992), where he appears to agree with Rohlfs and Tekavčić:

5. "...according to Rohlfs and Tekavčić... the Italo-Romance *linguistic domain*... represents an *exceptional* sum of dialectal varieties, *a «Little Romania»*..." (Pellegrini, 1992: 284-285 [emphasis added]).⁵⁰

Stating that Italo-Romance represents a "Little Romania" equates to saying that some Eastern and some Western Romance geolects are included in it. This in turn equates to saying that Italo-Romance—as intended by Pellegrini, namely the set of Cisalpine plus Peninsular geolects—does not represent a taxon (a "linguistic domain") within a genealogic classification of Romance geolects.

2.1.1.2.4. The taxon problem in Robert A. Hall (1974, 1976), 'Comparative Romance Grammar'

In Hall (1974, 1976), we encounter the same discrepancy that we have encountered in Pellegrini, deriving from mixing *Abstand* and *Ausbau* criteria within a formally unidimensional "classification" (the taxon problem). Unlike in Pellegrini, in Hall, the intentional insertion of the *Ausbau* criterion into a declaredly *Abstand*-based classification is not explicitly announced. However, we can recognize its interference following some author's statements, step by step.

⁵⁰ "...[i]l dominio linguistico italo-romanzo... rappresenta secondo il Rohlfs ed il Tekavčić una somma eccezionale di varietà dialettali, una «Piccola Romania»..."

Firstly, the author asserts his intention to classify "Romance languages" on the basis of the sharing of isoglosses (Hall, 1974: xi, 1, 16), according to the principles of "comparative method" (1974: xi). Importantly, the author specifies that he is not going to compare only standard varieties:

1. "Our attention will be devoted primarily to the standard languages, but *not excluding the dialects*, particularly when the latter cast light on developments which are otherwise difficult to understand." (Hall, 1974: 1 [emphasis added]).

In analogy with what Hall (1983) states about Rhaeto-Romance,⁵¹ the "dialects" that can "cast light on [such linguistic] developments" have evidently to share their *genealogical profile* with the "standard variety" on issue, otherwise they could not serve to clarify those linguistic "developments" themselves in a declaredly reconstructive perspective. The author's interest towards the local non-standard varieties is confirmed in the next example:

2. "[As suggested by Trager (1946: 463),] the ideal procedure [in order to reconstruct a 'family tree' for Romance] would be, if time, funds and man-power (*sic*) were available, to start with *all the modern standard languages and dialects of the various regions*, and to work backwards to the reconstruction, first of each intermediate stage (*e.g.* Proto-Ibero-Romance, Proto Gallo-Romance, etc.) and then still further backwards, ending with Proto-Romance itself." (Hall, 1974: 16 [emphasis added]).

On these premises, here is what Hall defines as "Italian dialects":

- 3. "The *Italian dialects* fall into three groups:
 - *a.* Northern, with the following divisions: i. Piedmontese...; ii. Lombard...; iii. Ligurian...;
 iv. Venetian...; v. Emilian, spoken... in the territories of Emilia and Romagna.⁵²
 - b. Central, south of a heavy bundle of isoglosses running... from approximately La Spezia to the region of Rimini: i. Marchigiano...; ii. Tuscan...; iii. Corsican...; iv. Umbrian...;
 v. the dialects of Latium...
 - c. Southern... with the following major dialectal areas: i. Abruzzese...; ii. Campanian...;
 iii. Apulian...; iv. Lucanian...; v. Calabrian...; vi. Sicilian..." (Hall, 1974: 29-30 [emphasis added]).

⁵¹ "As in the previous volumes, Rhaeto-Romance (Friulian, Ladin, and the various dialects of Romansh) is regarded as belonging to North Gallo-Romance, and hence available for comparative purposes when no related North French form (standard or dialectal) is available" (Hall, 1983: 208, Appendices, Further comparative tables).

⁵² Hall adds to this group the communities who emigrated from Northern Italy during the Middle Ages and settled in Southern Italy, especially in Lucania and Sicily.

Importantly, in Hall's graphical representation of the Romance Language Family tree, reproduced in Fig. 2.1 below (Hall, 1974: 14), all the "Italian dialects" are said to derive—as exclusive descendants—from the common ancestor "Proto-Italo-Romance", which in turn, together with Dalmatian, comes from the "Proto-Central Romance", a 'sister' of Proto-Western Romance (which is composed by Ibero-Romance and Gallo-Romance).



Figure 2.1. "Family-tree of the Romance languages" (Hall, 1974: 14, FIG. II)

This means that Hall does not ascribe what he calls the "Italian dialects" spoken in Northern Italy (see example 3) to Western Romance. At one point Hall states:

4. "[T]o be considered as belonging to the same family, two or more languages must show *regular correspondences*, not only in sounds or in vocabulary, but in all aspects of linguistic structure..." (Hall, 1974: 10 [emphasis added]).

According to the very concept of "classification" (Simpson, 1945: 3, 14, 15, 17; Bailey, 1994: 3), I assume that, in Hall's opinion, such "regular correspondences" are supposed to discriminate those "two or more languages" as *exclusive* members of that given "family", as opposed to other families, which in turn are defined on the basis of other "regular correspondences". Therefore, based on the premises in examples 1-4 and Figure 2.1, I expect Hall to show some Western Romance or Gallo-Romance linguistic innovations that none of those that he considers "Italo-Romance" varieties—Gallo-"Italic" included—share. In what follows I will show that this is not the case.

In Volume II (1976) of his *Comparative Romance Grammar*, Hall reconstructs the phonology of Proto-Romance. The author reports a series of cognate sets, each of which focuses on one of the different linguistic innovations that distinguish the various Romance sub-groups. I will report, in a reduced version (reducing the number of varieties compared), some of these sets of cognates, focusing on the features that, according to Hall, oppose Western Romance vs. Italo-Romance or Gallo-Romance vs. other Romance sub-groups. I will insert (in italic) the Milanese (Lombard) reflex,⁵³ namely the cognate representative of an "Italianizing" (Sanga, 1997: 255) Gallo-"Italic" variety. As the reader will see, the Milanese forms regularly match the uncontested Western Romance ones and the Gallo-Romance ones in particular, in opposition to the Peninsular "Italian" ones (represented by Tuscan):

PRom. ⁵⁴		'milk' lákte			
Ital.	[Tuscan]	lá tte		[Italo-Romance]	
	[Milanese]		lá č		[my insert]
OSFr.			lá č	[Western Romance]	
ONFr.			lá it	"	
Span.			lé č e	"	
Port.			léite	"	

"/kt/... palatalised in Western Romance" (Hall, 1976: 121).

⁵³ I also found all these Milanese reflexes in the Milanese-Italian dictionary of Cherubini (1839-1843).

⁵⁴ See (Hall, 1976: 2, Table 1): PRom. = Proto-Romance; Ital. = Italian; OSFr. = Old Southern French [sic]; ONFr. = Old Northern French; Span. = Spanish; Port = Portuguese.

"Intervocalic /p/... [lenited] in most (but not all) of Western Romance" (Hall, 1976: 63).

		'to know'			
PRom.		sapere			
Ital.	[Tuscan]	sapere		[Italo-Romance]	
	[Milanese]		savè		[my insert]
ONFr.			savéir	[Western Romance]	
Port.			sabér	دد	

"Intervocalic /g/... preserved before /a o u/ except in Gallo-Romance" (Hall, 1976: 75).

		'vegetable'			
PRom.		legúme(ne)			
Ital.	[Tuscan]	legúme		[Rest of Romania]	
	[Milanese]		lèm		[my insert]
OSFr.			leúm	[Gallo-Romance]	

"/pr/... lenited in Western Romance" (Hall, 1976: 95).

		'goat'			
PRom.		kápra			
Ital.	[Tuscan]	ká p ra		[Italo-Romance]	
	[Milanese]		ká v ra		[my insert]
OSFr.			ká b ra	[Western Romance]	
Port.			ká b ra	دد	

"/kk/... preserved in Sardinian and Italian (central and southern), simplified elsewhere" (Hall, 1976: 112).

		'cow'		
PRom.		wákka		
Ital.	[Tuscan]	vá kk a		
	[Milanese]		vá k a	[my insert]
OSFr.			vá k a	
Port.			vá k a	

From the above examples, it could at first be inferred that, inconsistently with his representation of the family tree model (see above Figure 2.1), by the label "Italian" Hall refers to the sole Peninsular

varieties. Nevertheless, taking a look to some other sets of cognates, the problem appears to be a trickier one. Indeed, while Hall normally takes the reflex representative for "Italian" from Tuscan, he sometimes takes it from other varieties of Italy, among which is Lombard. This indifferent use of some Lombard (Gallo-"Italic") or Tuscan (Peninsular Italy) reflexes as representatives of the "Italian language" confirms Hall's opinion—already shown in the family tree graph (see above Figure 2.1)—that Cisalpine and Peninsular Romance varieties of Italy share, as exclusive descendants, a common ancestor, namely "Proto-Italo-Romance", which is a branch of "Central Romance". However, this opinion is incompatible with Hall's sets of cognates themselves, where the Lombard reflexes regularly match Western Romance and contrast with Tuscan "Italian":

"DOUBLE (GEMINATE): preserved in Sardinian and Italian (central and southern), simplified elsewhere." (Hall, 1976: 109, 118).

	'skin'			'pot'			
PRom	pélle			ólla			
Ital.	pélle Tuscan				óla	Lombard	[original in Hall, not my insert]
OSFr.		pél			óla		
Port.		pél			óla		

"Pretonic /i/" (Hall 1976: 24).

	'tiny' (f. sg.)			'to adhere'				
PRom	minú^ta			pikáre				
Ital.	minúta Tuscan				pegár	Lombard	[original in Hall]	
OSFr.		menúda			p e ^gár			
Span.		menúda			pegár			

Based on these sets, one cannot work out what isoglosses distinguish Western Romance or Gallo-Romance from Italo-Romance. The explanation of this issue can be found in a passage of Hall (1974), where the author, introducing "Italo-Romance", assumes a perfect correspondence between the meanings of "Italo-Romance" and "Italy", and mentions the sole sharing of the literary language—an *Ausbau*-based criterion—as a factor that allows one to conceptualize such territory as a taxonomic unit:

5. "Italo-Romance, *as its name implies*, is the ensemble of Romance varieties *spoken in Italy*, and also in Corsica⁵⁵ and Sicily. The *Italian literary language* [based on Tuscan/Florentine] is used throughout Italy and its political dependencies." (Hall, 1974: 29 [emphasis added]).

In example 5, the linguistic label "Italo-Romance", normally a member of an Abstand-based classification, mirrors a priori the meaning of the terms "Italy" and "Italian", members of geopolitical, cultural, and literary (i.e. non-Abstand) nomenclatures, and this explains its inertial attribution to all the varieties spoken in the territory of the Italian Republic that are not universally recognised in the international literature as being (1.) peripheric appendixes of large groups predominantly extra-Italian from the geopolitical standpoint and (2.) genealogically non-Italo-Romance (i.e. Occitan, Franco-Provencal). This means that Lombard (Gallo-"Italic") is classified as "Italo-Romance" a priori, independently from the isoglosses that characterize it. Against what is expected in an Abstand-based taxonomy-and is actually observed as far as the other varieties classified by Hall are concerned—the grouping and the ascription of the varieties spoken exclusively (or predominantly) in the administrative Italian territory do not *follow* their Abstand description but rather *precede* it, based on a non-Abstand (geopolitical and literary) criterion and nomenclature. As a consequence, the sub-grouping and labelling do not match the linguistic descriptions, and the effects of the 'taxon problem' thus appear: the labels 'Italo-Romance' and 'Gallo-Romance' lose *informative power* (see Simpson 1945) in relation to all the other labels (Western Romance, Central Romance, etc.), nullifying the informativeness of the whole "classification", hence making it useless for scientific purposes.

2.1.1.2.5. The taxon problem in Michele Loporcaro (2009), 'Profilo linguistico dei dialetti italiani'

The intentional mix of *Abstand* and *Ausbau* criteria in a unidimensional "classification" overtly shows up in Loporcaro's (2009) *Profilo linguistico dei dialetti italiani*. In the chapter headed *The classification of Italian dialects*, the author firstly indicates Pellegrini's *Map of the dialects of*

⁵⁵ However, while the geopolitical criterion (is the sole one that) can explain—although not justify—the ascription of Gallo-"Italic" to Italo-Romance ("varieties spoken in Italy"), it can hardly explain it for Corsican.

*Italy*⁵⁶ as the currently most influential proposal of classification, and explains the criteria adopted by Pellegrini as follows:

1. "As explained in Pellegrini (1975: 57), in order to ascribe a given variety (or group of varieties) to Italo-Romance (or to exclude it from Italo-Romance), the criterion of roofing language (or in Pellegrini's terms, guide-language) is adopted in the discordant ['discordi'] cases. For this reason, Corsican does not show up in the map..." (Loporcaro, 2009: 70).⁵⁷

Unfortunately, Loporcaro does not specify what makes a case a "discordant/discorde⁵⁸" one which is a crucial point if one wants to understand Pellegrini's choices, which in turn Loporcaro seems to broadly agree with—nor does he explain what specific cases he considers as "discordant". Some lines later, referring to the criterion that he himself adopts in his study for deciding the ascription of a variety to the Italo-Romance group, and in partial contrast with the abovementioned Pellegrini's criteria, he states:

2. "In the following presentation *we will adopt a mixed criterion*, including [in the Italo-Romance group] both Sardinian, which is structurally more distant⁵⁹ but has Italian as its roof-language, and Corsican, which has French as its roof-language but is structurally closer to Italian" (Loporcaro, 1992: 70 [emphasis added])⁶⁰.

⁵⁶ Carta dei dialetti d'Italia (Pellegrini 1977).

⁵⁷ "Come spiegato in Pellegrini (1975: 57), per l'attribuzione all'italo-romanzo (o l'esclusione da esso) di una determinata varietà (o gruppo di varietà) si adotta, nei casi discordi, il criterio della lingua tetto (o nei termini di Pellegrini, lingua guida). Per questa ragione il còrso non figura sulla carta..."

⁵⁸ I will only briefly mention another tricky aspect of this Loporcaro's passage. Loporcaro's choice itself of the (uncommon) word "discorde" (discordant) could be questioned. In Italian, like in English, a 'discordant thing' is supposed to be discordant *with* something else. Indeed, the Zingarelli (2004) Italian dictionary only provides examples in the plural form, e.g. "discordant criticisms, interests, opinions". In these examples, what is "discordant" is two concepts that exclude one another (irreconcilable interests, irreconcilable opinions, etc.). However, in Loporcaro's passage, it is not specified what is discordant with what. Excluding that a "case" can be "discordant" with another "case", since two "cases" (here two linguistic varieties) cannot 'exclude one other', the only reasonable interpretation of the expression "discordant case" in this Loporcaro's passage seems to be 'a case (i.e. a linguistic variety) for which the literature provides *discordant*—i.e. irreconcilable—*linguistic descriptions*. However—and understandably— Loporcaro does not state this explicitly about Gallo-"Italic" varieties. Alternatively, one could refer to the "discordance" between the *Abstand* and the *Ausbau* classification of Gallo-"Italic", but Loporcaro does not do it explicitly either. Therefore, the meaning of "discordant" itself is unclear in this passage, as it remains unspecified what is discordant with what.

⁵⁹ It should be clarified as to what is "more distant" from which variety and with respect to which other one.

⁶⁰ "Nella presentazione che segue adotteremo un criterio misto, inserendo nella panoramica [in the Italo-Romance group] tanto il sardo, strutturalmente più distante ma avente per lingua tetto l'italiano, quanto il còrso, che ha come lingua tetto il francese ma è strutturalmente più vicino all'italiano"

What appears in both the above examples 1 and 2 is the lack of informative intention/function/power of the resulting "classifications". The author seems to not be interested in the fact that the reader could benefit from the "classification" by using it as a source of information, from which s/he can derive "structural" (i.e. linguistic) or sociological information about the individual varieties classified, as it could be in the case of a purely *Abstand* or a purely *Ausbau* classification. Indeed, the very fact that two ontologically and conceptually independent criteria-Abstand and Ausbau-intervene in a formally unidimensional "classification" of geolects nullifies the possibility to define that "classification" as an Abstand-based one or an Ausbau-based one. In the specific case quoted in example 2, the label Italo-Romance has no linguistic (Abstand) informative power as far as it is meant to inform about the heteronomy of Sardinian towards Tuscan/Italian; conversely, it has no sociological (Ausbau) informative power as far as it is meant to inform about the linguistic traits of Corsican. Based on the two different criteria by which Loporcaro respectively ascribes Sardinian and Corsican to Italo-Romance, the reader cannot deduce how other varieties should be classified-for instance the Occitan or Franco-Provencal of Piedmont and Valle d'Aosta. Indeed, based on the criterion used with Corsican ("structural distan[ce]") they should be classified as Gallo-Romance, while based on the criterion used with Sardinian (heteronomy with respect to Italian) they should be classified as currently Italo-Romance (see the sociolinguistic relationship between Occitan of Piedmont and Italian in Allasino et al., 2007). Eventually, Loporcaro refers to Occitan and Franco-Provençal as Gallo-Romance, but this choice is not derivable by a rule that could also harmoniously explain his ascribing Sardinian and Corsican to Italo-Romance:

3. "Gallo-Romance alloglot varieties, namely Franco-Provençal and Provençal, are spoken at the northwestern border [in Italian territory], in territorial continuity with the corresponding areas in the French and Swiss territories. The Franco-Provençal area embraces the Val d'Aosta and the adjacent part of western Piedmont, up to the high Susa valley where, from Chiomonte, the Occitan area begins, extending as far as Col di Tenda and Limone Piemonte." (Loporcaro, 2009: 64)⁶¹.

⁶¹ "Varietà alloglotte gallo-romanze, franco-provenzali e provenzali, si parlano al confine nord-occidentale [in territorio italiano], in continuità territoriale con le aree corrispondenti in territorio francese e svizzero. L'area franco-provenzale abbraccia la Val d'Aosta e la parte adiacente del Piemonte occidentale, sino all'alta Valle di Susa dove, da Chiomonte, inizia l'area occitana che si estende fino al Col di Tenda e a Limone Piemonte."

4. "Piedmont... the western part of the region is occupied by Gallo-Romance varieties...". (Loporcaro, 2009: 94)⁶².

Summing up, like in the cases discussed in the previous sections, the *Abstand* and the *Ausbau* criteria are, also in Loporcaro's (2009) case, now one and now the other, unpredictably applied to the items of one unidimensional "classification", meaning that the reader has no elements by which to infer what criterion is working for one geolect and what for another one (the taxon problem). Therefore, the "classification" is not informative, hence it is not useful for scientific purposes and for this reason should be rejected.

2.1.2. THE 'AD HOC' PROBLEM

The ad hoc problem is conceptually distinct from the taxon problem, even though when the ad hoc problem appears the two are concomitant. It appears when one of the compresent criteria (whose simultaneous intervention entails the taxon problem per se) is applied only to some items and not to others that present the same conditions of applicability of the criterion itself. Here is a fictitious "classification" suffering from the ad hoc problem:

wolf and *cat* have to be grouped together because they both have mammary glands; on the other hand, *dog* has to be grouped with *canary* in a contrasting group *of the same unidimensional classification (!)* because it is a domestic animal just as the canary is.

This "classification" is not informative as an effect of the taxon problem (presented in Section 2.1.1 and exemplified in Section 2.1.1.2) and for an additional reason: indeed, one cannot understand why *dog* is included in that given group and not *cat*—which is a domestic animal too. Conversely, a scientist cannot know in which group to locate *cow* nor any other animal. If the taxon problem is sufficient to make the "classification" non-informative, the additional ad hoc problem makes it a *non-organic conglomeration of 'pieces'* of two independent classifications, rather than *one* classification. Therefore, the ad hoc problem adds to the taxon problem in making the "classification" uninformative, hence not useful for scientific purposes.

⁶² "Piemonte ... il lembo occidentale della regione è occupato da varietà gallo-romanze..."

2.1.2.1. THE AD HOC PROBLEM IN THE LITERATURE

In Section 2.1.2.1.1 I will show one of the possible examples of the *ad hoc* problem that the literature offers. In that section the expression "roof-language" will be cited, which needs some clarifications that I will give in the following Section 2.1.2.1.2.

2.1.2.1.1. The ad hoc problem in Loporcaro (2009), 'Profilo linguistico dei dialetti italiani'

In Section 2.1.1.2.5 above, I focused on the passages of Loporcaro (2009) where the specific effects of the taxon problem surface. However, in those very same lines the specific effects of the ad hoc problem can also be recognised.

At one point, Loporcaro is explaining why, in the classification that he is proposing, Sicilian,⁶³ Corsican, and Turinese (the Gallo-"Italic" geolect of Turin, in Piedmont) are equally classified as "Italian dialects", in spite of a number of linguistic changes that Turinese shares with French and not with Sicilian and Corsican (Loporcaro, 2009: 10-12, 82-91, see also 16):

1. "Why then do we call it [Turinese] an Italian dialect, like Sicilian? The answer is *in part of sociopolitical nature*: since the 16th century, Turinese has had Italian as its roof-language⁶⁴... If the Duchy of Savoy in the sixteenth century remained totally *culturally* French, Turinese would now be given *a different classification*. However, it is not to be thought that classification is a *purely* conventional operation, made on a political basis and free from linguistic criteria. Though the Corsican dialects have, as mentioned, French as their roof-language from the second half of the 18th century, they still remain Italo-Romance varieties as just a glance at a linguistic atlas map will show..." (Loporcaro, 2009: 11-12 [my translation,⁶⁵ emphasis added]).⁶⁶

⁶³ There is no controversy in the scholarly literature about the classification of Sicilian as Italo-Romance.

⁶⁴ See Section 2.1.2.1.2 for some considerations about the questionable use of the term 'lingua tetto / roof-language' in this Loporcaro passage.

⁶⁵ See footnote 9.

⁶⁶ "Perché dunque chiamiamo quest'ultimo [il torinese] un dialetto italiano, al pari del siciliano? La risposta è in parte di natura sociopolitica: il torinese, sin dal Cinquecento, ha come lingua tetto l'italiano e in direzione di un'omologazione strutturale all'italiano lo spingono, insensibilmente, i processi di standardizzazione. Se il ducato di Savoia nel Cinquecento fosse rimasto per intero culturalmente francese, del torinese si darebbe oggi una classificazione diversa. Non bisogna però credere che la classificazione sia operazione puramente convenzionale, su base politica e svincolata da criteri linguistici. Se i dialetti còrsi, come ricordato, hanno dal secondo Settecento il francese come lingua tetto, essi restano pur sempre varietà italo-romanze come mostra anche solo uno sguardo ad una carta di atlante linguistico..."

At this point, Loporcaro quotes some Corsican versions of a sentence taken from a linguistic atlas,⁶⁷ and referring to them, the author continues:

2. "We can notice [in the Corsican versions] [1] the phono-syntactic strengthening..., [2] the retention of final vowels, which Corsican shares with Tuscan..., [3] the possessive enclitic (mammáda) which is not encountered in Gallo-Romance but which is *in the South-Central Italian* dialects. These, and many other isoglosses, exclude the ascription of Corsican to Gallo-Romance and qualify it structurally as Italo-Romance." (Loporcaro, 2009: 12-13 [emphasis added]).⁶⁸

Note that, based on the argument espoused in example 2, Loporcaro should classify Turinese as Gallo-Romance. This is because Turinese-and Gallo-"Italic" in general-present, still today, all the linguistic traits that, in example 2, Loporcaro considers relevant for classifying a variety as Gallo-Romance, and not Italo-Romance; indeed, [1] it does not present phono-syntactic strengthening, [2] does not retain final vowels (see Loporcaro, 2009: 95), and [3] does not show enclitic possessive. Yet, Loporcaro does not explain why the same traits would be determinant for classifying Corsican as Italo-Romance and not Turinese as Gallo-Romance. What makes this inconsistency a possible manifestation of the *ad hoc* problem (and not only of the taxon problem) is that Turinese and Corsican are equally described as genealogically non-Italo-Romance and non-Gallo-Romance respectively, so that there is even no *formal* pretext for claiming that only the classification of Turinese should be defined a "discordant" case (see Section 2.1.1.2.5), and that the Abstand criterion should consequently be applied to Corsican and not to Turinese, as the (questionable) rule that Loporcaro takes from Pellegrini reads (see Section 2.1.1.2.5, example 1). This criticism is independent and is valid in its own right, even if we assumed as a working hypothesis the questionable (and actually rejected in the sections above) idea that the cultural orientation of Turinese towards an Italo-Romance standard variety (Italian) makes its ascription to Gallo-Romance problematic, and that such an alleged problem would be solved by ascribing Turinese to Italo-Romance. The hypothesis that Loporcaro is applying the Ausbau criterion ad hoc to Turinese is supported by the fact that the same method is overtly applied by him to Sardinian:

⁶⁷ The atlas maps ALEIC III 433.

⁶⁸ "Vi si notano il raddoppiamento fonosintattico..., la conservazione delle vocali finali, che accomunano il còrso al toscano..., il possessivo enclitico [mammáda] che ricorre non già in gallo-romanzo ma nei dialetti italiani centromeridionali. Queste e molte altre isoglosse escludono una pertinenza del còrso al gallo-romanzo e lo qualificano strutturalmente come italo-romanzo."

3. "In the following presentation *we will adopt a mixed criterion*, including [in the Italo-Romance group] both Sardinian, which is structurally more distant but has Italian as its roof-language, and Corsican, which has French as its roof-language but is structurally closer to Italian." (Loporcaro, 2009: 70 [emphasis added]).⁶⁹

Apparently, one of the two ontologically independent criteria (Abstand and Ausbau) is applied ad hoc only to Turinese/Gallo-"Italic" and Sardinian, namely to some of the items included in a formally unidimensional "classification". This seems to be clearly against the goal of taxonomy, which aims at an organic classification through the systematic application of *one* specific and manifest criterion to all the items classified, taken as an organic whole. The result is, instead, a non-organic conglomeration of 'pieces' of two independent classifications of Romance varieties, the first one of which is compiled applying an Abstand criterion to a sub-set of the items included in the "classification", while the second one is compiled applying an *Ausbau* criterion to another sub-set of items. Such "classification" is not informative: after reading their linguistic description, one who is not previously informed about that ad hoc treatment cannot understand why Gallo-"Italic" and Corsican are both ascribed to Italo-Romance. Moreover, even after having possibly been informed about the ad hoc treatment reserved for Gallo-"Italic", the reader cannot know why whichever else non-Gallo-"Italic" geolect is ascribed to a given group of that "classification" and not to another one, since they cannot know whether that given geolect has also received or not the-by definition unpredictable-ad hoc treatment. Being concomitant with the taxon problem, and—like the taxon problem—making the "classification" uninformative, the ad hoc problem adds to the taxon problem in making the "classification" useless for scientific purposes.

2.1.2.1.2. THE MISLEADING USE OF THE EXPRESSION *ROOF-LANGUAGE* IN LOPORCARO (2009)

In examples 1 and 3 of the above Section 2.1.2.1.1, we have seen Loporcaro defining Italian as the "roof-language" of Turinese, and French as the "roof-language" of Corsican. In this section, I will briefly introduce the Klossian concept of "roofing" and show that Loporcaro (2009) uses the expression "roof-language" in a misleading way.

⁶⁹ "Nella presentazione che segue adotteremo un criterio misto, inserendo nella panoramica [nel gruppo Italo-Romanzo] tanto il sardo, strutturalmente più distante ma avente per lingua tetto l'italiano, quanto il còrso, che ha come lingua tetto il francese ma è strutturalmente più vicino all'italiano."

The expression "roofing language" or "roof-language", currently used by many scholars, derives from the Klossian concepts of "roofed" vs. "roofless dialects" (Muljačić, 1984: 78). Kloss understood the "roofless dialects" as "the local dialects [that] either *never were*, or are no longer under the *protecting* 'roof' of the standard language" (Kloss, 1969: 71-74 [emphasis added]; see also Kloss, 1952: 21). Muljačić specifies the origin of the expression "roofing *language*" as follows:

1. "Kloss has never needed the German term *Dachsprache* 'roofing language'… Nevertheless, he uses 'roofing' (German *Überdachung*)… Other linguists who revised the Klossian model coined the term 'roofing language' (Muljačić, 1989c)" (Muljačić, 1990: 24 [italic original]).

Therefore, the concept of "roofing language" seems to be implicit in the Klossian concept of "roofed/roofless dialects". However, in the scholarly literature, the expression "roofing language" is used in various—and often irreconcilable—ways (see also Salamon 2011: 3), moving significantly away from the original Klossian conception of the 'roof metaphor'. Here I will limit myself to point out (a few of) the differences between the Klossian concept of "roofing" and the meaning that "lingua tetto"—literally "roof-language"—has in Loporcaro (2009) (Section 2.1.2.1.1 examples 1-3).

According to Kloss, only a closely related variety can play the role of a "protecting roof" (Kloss, 1969: 72) for a "local dialect":

2. "The term roofless dialect is understood to refer to a dialect the speakers of which *never have been* or no longer are familiar with *the kin-standard naturally corresponding to it* and which, in other words, are not *shielded* by the 'roof' of the standard variety but directly exposed to the impact of another, *unrelated or less closely related standard*." (Kloss & McConnell, 1978: 23 [emphasis added]).

Berruto (1995) insists on this point too:

3. "A concept of particular relevance... is Überdachung or 'coverage' which was introduced by Kloss in 1978⁷⁰ which means that in a given territory, a variety of a language has upon itself a language *closely related* (which is called Dachsprache⁷¹ or 'roof language') as the language of the culture and normative reference variety. But when it is not such a way i.e. when a variety of a language has upon itself a

 ⁷⁰ See Kloss (1978). I understand that the 'roof metaphor' was already present in Kloss (1952) (see Muljačić, 1984).
 ⁷¹ See example 1.

language system *not closely related*, it is named a dachlos variety or 'roofless language'." (Berruto, 1995: 206 [emphasis added], English translation by Eszter Salamon in Salamon 2011).⁷²

Importantly (especially in view of Loporcaro's arguments at issues), Kloss mentions Corsican "vernaculars" among the "numberless... instances" of "roofless dialects" (Kloss, 1969: 72), explaining his choice as follows:

4. "In Corsica, standard Italian today is nothing but a foreign, even alien language, while the local vernacular, a subvariety of the Tuscan dialect, is still fully alive." (Kloss, 1969: 72).

In examples 2 and 4, it appears that according to Kloss (*a.*) only the dominant variety that can play the role of a "protecting roof" for the local dialect X—in virtue of its close kinship with X—*can be defined as the 'standard language of X'*; and (*b.*) only Italian *could* play the role of "protecting roof/standard language" for Corsican, in virtue of their close kinship. French (a Gallo-Romance variety), which has been the official language and the language of culture for Corsican speakers since the second half of the 18^{th} century, is evidently too far from the genealogical and synchronological (see Section 1.6.2) standpoint to be considered "the kin-standard naturally corresponding to" Corsican (an Italo-Romance variety). That is why the local vernaculars of Corsica are "roofless dialects". The fact that Italian was the dominant language in Corsica before the annexation of the island to France is not the determinant factor for identifying Italian as the possible "protecting roof" of Corsican; rather, only the linguistic similarity between the two varieties is crucial, as this passage on Flemish shows:

5. "In some cases we may be dealing with areas where the *standard language* never gained a foothold at all, such is the case of the hinterland of Dunkerque (France) where the speakers of the local Flemish dialect *never got a chance to learn standard Dutch* (the so-called A.B.N.⁷³)." (Kloss, 1969 : 72 [emphasis added]).

⁷² "Un concetto particolarmente rilevante dal punto di vista dei rapporti areali e territoriali fra le lingue e varietà di lingua è quello di Überdachung, 'copertura', introdotto da Kloss (1978) col quale si intende il fatto che una varietà di lingua abbia sopra di sé in un determinato territorio, quale lingua di cultura e varietà normativa di riferimento, un sistema linguistico strettamente imparentato (che viene chiamato Dachsprache⁷², "lingua tetto"). Quando invece così non è, cioè quando una varietà ha sopra di sé un sistema non con essa strettamente imparentato, si parla di varietà dachlos, 'senza tetto'".

⁷³ "Algemeen Beschaafd Nederlands (... ABN) is a term used generally in the Netherlands by linguists and laymen alike to refer to the country's prestige dialect; a literal translation would be 'General Refined Dutch'" (Mees & Collins, 1982).

Standard Dutch has never been the dominant (*Ausbau*) language in the hinterland of Dunkerque. However, Kloss considers it the only possible candidate to become the *standard language* for the Flemish dialects spoken there. Indeed, its close kinship with those dialects would allow standard Dutch—in the case it would really become socio-politically dominant in that region—to play for them the role of the "protecting roof" that French, their actual dominating language, cannot play, due to the wide linguistic distance existing between it and the Dunkerque geolect. This suggests that in the case of Corsican dialects, too, only the degree of linguistic similarity is relevant for Kloss in order to consider Italian their possible standard language, regardless of whether Italian was historically their dominant language.

Nevertheless, in the examples above from Loporcaro (2009), the degree of linguistic similarity between a dominating and a dominated variety appears to not be relevant in order to consider them as the roofing/roofed variety of each other (Section 2.1.2.1.1 examples 1 and 3). Evidently, Kloss and Loporcaro use the 'roof metaphor' in two irreconcilable ways: in Loporcaro (2009), the expression "roof-language" appears to be a perfect synonym of 'dominant language', so Corsican and Turinese are considered to have simply exchanged their "roof-languages" during their history (Section 2.1.2.1.1 example 1). On this view, the Klossian distinction "roofed dialects" vs. "roofless dialects" (Kloss, 1969: 73), which originally motivated the use and spread of the expression "rooflanguage" itself in the literature, is deprived of any epistemological utility. Therefore, by defining Italian standard language as the "roof-language" of Turinese (Gallo-"Italic") according to his non-Klossian conception of "roof", Loporcaro misleadingly induces the readers who are familiar with the original Klossian conception but not with the languages of Italy to infer that Italian can be considered "the kin-standard naturally corresponding to" Turinese, playing for it the role of "protecting roof". Moreover, this inference would be encouraged by most scholars'-and Loporcaro's himself-habit to classify Gallo-"Italic" as Italo-Romance. However, in the previous sections we have seen (and we will also see in Chapter 3) that historical linguistic and dialectological studies (Sections 2.1.1.2 and 2.1.2), and dialectometric measurements (Section 1.3, Goebl, 2008; Tamburelli & Brasca, 2018) show (a.) a wide linguistic distance between Gallo-"Italic" and Tuscan, (b.) a Western Romance and in particular Gallo-Romance genealogical profile of Gallo-"Italic" and (c.) hierarchical clusterings grouping Gallo-"Italic" more closely with the uncontested Gallo-Romance varieties of France and Italy than with standard Italian and the other geolects south of the Massa-Senigallia line (see more details in Section 3.3.4 below). In addition
to this, quantitative research (Tamburelli, 2014) shows the low intelligibility of Milanese (an "Italianizing" Gallo-"Italic" geolect, see Sanga 1997: 255) for Tuscan listeners. This being the case, the idea that Italian/Tuscan (an Italo-Romance variety) could be considered as "the kin-standard naturally corresponding to" Turinese/Gallo-"Italic" (a Gallo-Romance variety) is at the very least questionable, since, as we have seen, French (a Gallo-Romance variety) cannot be considered "the kin-standard naturally corresponding to" Corsican (an Italo-Romance variety) due to their distant kinship and wide linguistic distance (Kloss, 1969: 72). I then conclude that the expression "roof-language" used in Loporcaro (2009) according to a non-Klossian conception of "roof" is misleading and should be avoided.

In this regard, a possible venue of research could involve a reappraisal of the ancient *Lombard language*—a supra-local koine used in Northern Italy from the Middle Ages at least until the 16th century (Sanga, 1990: 79-163; Muljačić, 1990: 185-186)—as the historical "kin-standard naturally corresponding to" the Gallo-"Italic" local varieties.

2.2. OTHER FORMAL INCONSISTENCIES IN THE PRO-ITALO- TRADITION

The problems that I will present in this section are not inherent to the practice of mixing independent criteria in a unidimensional "classification". I will briefly present them since they are encountered in several 'mixed criterion' studies, in addition to the ontological and possibly the ad hoc problems, entailing some more inconsistencies in the pro-Italo- classification of Gallo-"Italic". In particular, in Section 2.2.1, I will present the 'lack of quantitative evidence problem', in Section 2.2.2 I will present the 'inertial use of the nomenclature problem', and finally, in Section 2.2.3, I will present the 'disharmonious use of the label *Italian* problem'.

2.2.1. THE 'LACK OF QUANTITATIVE EVIDENCE' PROBLEM

In this section I will show that some 'mixed-criterion' scholars, besides making explicit or implicit recourse to *Ausbau* arguments in their proposals of predominantly *Abstand*-based "classifications" (ontological problem), also refer to the effects of a "linguistic" convergence of Gallo-"Italic" towards Italo-Romance, starting from the Middle Ages, as an additional *Abstand* reason supporting their pro-Italo- stance. However, these scholars do not specify *how many* and *what* borrowed 'anti-Gallo-Romance' linguistic traits (i.e. traits that would make the effects of Western Romance and Gallo-Romance changes no longer recognizable) and Italo-Romance defining traits would be

crucial in obscuring the Gallo-Romance nature of Gallo-"Italic" and determining its Italo-Romance or "Italian" nature. Consequently, they neither say why these possible borrowed traits would be more relevant than all the Western Romance and Gallo-Romance traits that dialectologists still recognise in the Gallo-"Italic" geolects of our days. In particular, and importantly, despite making a statement which is quantitative in nature ('Gallo-"Italic" became more similar to Italo-Romance then to Gallo-Romance'), they do not provide quantitative evidence in order to support it, and seem to give such 'critical'⁷⁴ linguistic convergence for granted. Concerning the 'classical' pro-Italostudies currently analysed, it is worth pointing out that quantitative methods were not at the disposal of researchers in support of dialectological research at the time when most (or all) of them (e.g. von Wartburg 1967) were written, and that this could be sufficient to explain the fact that these studies did not provide quantitative evidence. However, it seems equally fair to note that these studies present the 'critical convergence scenario' as a historical matter of fact all the same, rather than propose it as a hypothesis whose necessary testing would be postponed to future research, when some quantitative method is hopefully available. This is what makes the lack of quantitative evidence a formal issue. In fact, the 'critical convergence scenario' (i.e. the post-Wartburg hypothesis, see Section 3.2.8) is a claim which is quantitative in nature, and should be properly supported, as such, by means of quantitative evidence. Henceforth, I will use the expression 'critical convergence' to refer to the amount of linguistic convergence that, according to these pro-Italo- scholars, Gallo-"Italic" would have undertaken, and that these scholars assume as being quantitatively sufficient in order for Gallo-"Italic" to have become more similar to the Peninsular geolects than to the uncontested Gallo-Romance geolects.

2.2.1.1. A CONCOMITANT PROBLEM: A SECOND FORM OF THE TAXON PROBLEM

Before exemplifying the lack of quantitative evidence problem, a clarification needs to be made. The studies that present this major problem concerning the lack of quantitative evidence concomitantly present a second form of the taxon problem: even assuming, as a working

⁷⁴ I based and propose the expression 'critical convergence' on the model of "critical mass: the minimum amount or number required for something to happen, begin, etc." (collinsdictionary.com). Analogously, 'critical convergence' will henceforth be intended as the minimum amount required for a linguistic convergence to make Gallo-"Italic" more similar to the second-cousin Peninsular geolects than to the sibling Gallo-Romance geolects. As examples of the use of the expression 'critical mass' in some scientific disciplines see Sarah & Mona (2008) and Woosley & Timmes (1996).

hypothesis, that such a critical convergence occurred, they illegitimately mix two distinct—yet both *Abstand*—classificatory criteria in a unidimensional "classification". These criteria are the *genealogical* one and what I have named the *synchronological* one (see Section 1.6.2). According to the genealogical criterion, affinity between the geolects classified is meant in terms of degree of kinship (i.e. the closer the common ancestor, the greater the degree of affinity), while according to the synchronological criterion (see Sections 1.6.2 and 3.2.7) affinity is meant in terms of linguistic similarity, regardless of whether similarity is due to common ancestry, contact, and/or possibly unrelated but convergent changes. Similarly to what was observed in Section 2.1.1, these two criteria should correspond to two distinct classifications and nomenclatures. Indeed, recent linguistic developments cannot change the genealogical nature of a geolect, which is by definition determined by primitive changes, and in any case by the changes that occurred before the split preceding the occurrence of those recent developments themselves.

To take the most benign position towards the studies at issue, one could conjecture that the entire classification proposed in them is consistently intended as ultimately a synchronological one, understanding that in all the non-Gallo-"Italic" parts of the classification, the synchronological grouping continues the genealogical one and coincides with it. This could mean that in those pro-Italo- scholars' opinion, the more recent developments of the individual non-Gallo-"Italic" languages did not affect and did not change their 'original'-namely genealogical-grouping. However, also taking into consideration this possibility, the classification as a whole could not be said entirely and consistently to be a synchronological one. Indeed, in the studies at issue, the coincidence of the genealogical and the synchronological grouping in the non-Gallo-"Italic" parts of the Romance family is not explicitly stated nor discussed nor explicitly supported by evidence. For instance, in Wartburg (1967), it is overlooked whether Occitan is still today synchronologically closer to French and Rhaeto-Romance than to Gallo-"Italic" or to Catalan. Given the particularly innovative linguistic nature of French within the genealogically-identified Gallo-Romance group, it is at the very least questionable that possible effects of more recent linguistic developments be taken into consideration only as far as the ascription of Gallo-"Italic" is concerned, and not as far as the ascription of, say, French, Occitan, or Catalan is concerned. In other words, if in the pro-Italo- studies at issue the classification proposed was intended to be ultimately synchronologicalas the criterion used for the ascription of Gallo-"Italic" could suggest—the genealogical grouping should have been put apart for *all* the Romance geolects, and a new general grouping for all Romance geolects—and not only for Gallo-"Italic"—should have been identified *empirically* on the basis of linguistic similarity among all Romance geolects as a whole. Instead, as I have said above, in the pro-Italo- studies that suffer from the 'lack of quantitative evidence problem', the synchronological grouping of the non-Gallo-"Italic" geolects is not even discussed, and its coincidence with the genealogical grouping—if understood by those scholars—would be given for granted. Hence, the grouping of non-Gallo-"Italic" geolects is, as a matter of fact, only motivated by genealogical arguments. This makes the grouping of the entire "classification" not entirely based on genealogy nor entirely based on the synchronological criterion. The resulting "classification" is therefore uninformative, hence useless for scientific purposes, and has, for this reason, to be rejected.

The distinction between the genealogical and the synchronological classificatory criteria will be taken up again in Section 3.2.7.

2.2.1.2. THE NEED FOR QUANTITATIVE EVIDENCE IN LOPORCARO (2009)

Besides recognizing in several instances the intervention of a purely "socio-political" (*Ausbau*) criterion in his proposal of classification (see also "storico-culturale" and "storico-politica", Loporcaro 2009: 11-13; see also 2009: 70), Loporcaro also refers to the direct "*linguistic* repercussions" of heteronomy, which seem to constitute an additional *Abstand* reason for classifying Piedmontese (and supposedly all of Gallo-"Italic") as an "Italian dialect" within the Italo-Romance group:

1. "Autonomy/heteronomy is a socio-political fact, but it has *linguistic repercussions*, both on the structural and on the classificatory level. *On the structural level*, a heteronomy relationship opens the way to the progressive *approach of the (heteronomous) dialect to the roof-language*, by standardization (here understood not as the creation of a norm but as a homologation to an already codified standard). *The most evident aspect of this standardization is the lexical one. Today*, all dialects borrow from Italian..." (Loporcaro, 2009: 8 [emphasis added])⁷⁵.

⁷⁵ "L'autonomia/eteronomia è un fatto sociopolitico, che ha però ripercussioni linguistiche, tanto sul piano strutturale quanto su quello della classificazione. Sul piano strutturale, un rapporto di eteronomia apre la strada al progressivo avvicinamento del dialetto (eteronomo) alla lingua tetto, per standardizzazione (intesa qui come omologazione ad uno standard già codificato, non come creazione di una norma). L'aspetto più vistoso di tale standardizzazione è quello lessicale. Oggi tutti i dialetti assumono prestiti dall'italiano..."

2. "[The dialect] of Turin has Italian as its roof-language since the sixteenth century, and the processes of standardization push it imperceptibly *towards a structural homologation to Italian*." (Loporcaro, 2009: 12 [emphasis added])⁷⁶.

In example 1, Loporcaro mentions the "lexical loans" as an example of "structural approaching", but does not provide examples of such "approaching" (i.e. convergence) in what the scholarly literature universally considers to be the proper 'structures' of a language, that is phonology, morphology, and syntax. Indeed, as Alinei (1996: 161-171) points out, a distinction should be made between "sociolinguistic changes" or "structural changes" on the one hand, "which have an impact on the grammar of a language... [namely] on phonology, morphology or syntax",⁷⁷ and "culturallinguistic changes" on the other (also "cultural-linguistic renovation"), "which have no impact on the grammar... and concern only or mainly semantics and lexicon".⁷⁸ These latter, despite being a possible first step preluding proper structural changes (see Eifring & Theil, 2005), are by themselves a form of resistance of the language, one of the forms of the "linguistic conservativity, just because they occur by means of the language, respecting its rules."⁷⁹ This suggests that "borrowing lexicon from Italian" by itself, besides being inherently a limited criterion since it concerns only one of the domains of the language, should also be given a relative synchronological classificatory relevance compared to borrowing structures proper. Indeed, among the world's languages, "lexical items are much more easily borrowed than either grammar or phonology" (Eifring & Theil, 2005: 4), meaning that borrowing structures normally presupposes borrowing lexicon but not vice versa, and indicates for this reason a deeper and wider linguistic convergence than the mere borrowing of lexicon. In this respect, comparing some Piedmontese words with their Sicilian and French cognates a few lines below, Loporcaro shows and explicitly recognizes the bigger phonological (namely structural) proximity between Piedmontese and French than between Piedmontese and Sicilian (the traits at issue are proper to Gallo-"Italic" in general, Loporcaro,

⁷⁶ "[I]l torinese, sin dal Cinquecento, ha come lingua tetto l'italiano e in direzione di un'omologazione strutturale all'italiano lo spingono, insensibilmente, i processi di standardizzazione."

⁷⁷ "Mutamenti sociolinguistici... che hanno un impatto sulla grammatica di una lingua... in fonologia, in morfologia, o in sintassi..."

⁷⁸ "Mutamenti culturo-linguistici... che non hanno un impatto sulla grammatica... e che riguardano solo o primariamente la semantica e il lessico..."

⁷⁹ "[I]l rinnovamento culturo-linguistico... è una delle principali forme della conservatività linguistica, proprio perché avviene mediante la lingua, nel rispetto delle sue regole".

2009; see Section 2.1.2.1.1). This very fact suggests that, in order to support the idea that heteronomy towards Tuscan/Italian adds some Abstand reasons to the Ausbau ones for classifying Piedmontese as Italo-Romance—as Loporcaro ultimately does—further research would be needed to provide empirical/quantitative evidence not only that some linguistic convergence of Piedmontese upon Italian/Tuscan has occurred, but also that such convergence was structural and of such a quantitative value that today the borrowed Italo-Romance structural traits obscure the inherited Gallo-Romance ones, making these latter currently visible only in a minority of inherited lexical relics. In particular, it would be proper for such further research (1.) to explicitly specify what structural traits oppose Gallo-Romance to Italo-Romance in the classifier's view; (2.) then possibly exemplify all the Italian/Italo-Romance *structural* traits (in opposition to Gallo-Romance) that Piedmontese would have borrowed from Tuscan/Italian; and finally (3.) measure by some quantitative method and show the prevalence of borrowed Italo-Romance traits in Piedmontese over the inherited Gallo-Romance ones. As long as these conditions are not fulfilled—as it seems to be the case in Loporcaro (2009)-the claimed 'critical structural convergence scenario' turns out to be presented to the reader as a given. Therefore, the lack of a manifest statement about what traits are relevant to the classification makes the resulting "classification" not replicable and formally not falsifiable; the lack of quantitative evidence renders the supposed 'critical structural convergence scenario' unsupported. In Section 3.2.7, these arguments will be expanded.

2.2.1.3. THE TAXON, THE CATEGORY, AND THE 'LACK OF QUANTITATIVE EVIDENCE' PROBLEMS IN LAUSBERG (1965), 'LINGÜÍSTICA ROMÁNICA'

In this section I will show how three conceptually distinct problems—among the ones that I have presented in Chapters 1 and 2—surface in a single pro-Italo- study.

Like in Posner (1996) (see Section 2.1.1.1.1), in Lausberg (1965) the two aspects of the ontological problem—the category problem and the taxon problem—surface exemplarily. Indeed, the two distinct criteria (*Abstand* and *Ausbau*) alternatively and unpredictably decide both (1.) what Romance sub-group a variety should be ascribed to (taxon problem) and (2.) what set of Romance geolects should be considered a separate "language" (category problem).

It is worth following, step by step, how the *Abstand* and the *Ausbau* criteria come alternatively and unpredictably into play in Lausberg (1965). In his introduction to the classification of Romance languages, Lausberg states:

1. "Based on the degree of kinship, Romania is divided into three regions:

I. Western Romania with the following partial spaces:

A) Gallo-Romance (Prov., Franco-Prov., Fr.);

B) Rhaeto-Romance;

C) Northern Italy;

D) Ibero-Romance (Cat., Sp., Port.);

II. Eastern Romania with the following partial spaces:

A) Central and southern Italy;

B) Dalmatia;

C) Rumania⁸⁰;

III. Sardinia." (Lausberg, 1965: 53-54 [emphasis added]).⁸¹

2. "[T]his division of Romania corresponds roughly to the end of the imperial era... [T]his division *does not take into account the current division into the great national linguistic spaces created by the influence of written languages* and which are a concrete fact from the Middle and Modern Ages, but it relies exclusively on the state and condition of the *dialects*." (Lausberg, 1965: 54 [emphasis added]).⁸²

Here the genealogical criterion (which is an *Abstand* criterion) is explicitly at work and answers the taxon question: 'to what major Romance sub-groups should the listed varieties (A, B, C, etc.) be ascribed to?' (see Section 2.1.1). The varieties listed seem to be ascribed to groups I, II and III consistently with Lausberg's and other 'classical' scholarly *Abstand* descriptions (e.g. von Wartburg, 1967). However, an inconsistent nomenclature (system of labels) can be noticed, in which some language names (Gallo-Romance, Rhaeto-Romance and Ibero-Romance) and some geopolitical names (northern Italy, central and southern Italy, Dalmatia, Rumania and Sardinia) cohabit. This inconsistency could be regarded as a superficial problem of labelling, as far as 'Dalmatia', 'Rumania', and 'Sardinia' are concerned. Indeed, these labels could be unproblematically interpreted as if they were intended by the author as substantially corresponding

⁸⁰ Note that 'Rumania' is the European country, not to be confused with 'Romania', which is the entire Romance geolinguistic domain.

⁸¹ "A base del grado de parentesco, la Romania resulta dividida en tres regiones : I. Romania occidental con los siguientes espacios parciales : A) Galorromania (prov., francoprov., fr.) ; B) Retorromania ; C) Norte de Italia ; D) Iberorromania (cat., esp., port.) ; II. Romania oriental con los siguientes espacios parciales : A) Centro y sur de Italia ; B) Dalmacia ; C) Rumanía ; III. Cerdeña."

⁸² "[E]sta división de la Romania corresponde aproximadamente a los finales de la época imperial... [E]sta división no tiene en cuenta la division actual en los grandes espacios lingüísticos nacionales creados por el influjo de las lenguas escritas y que son un hecho concreto de la Edad Media y Moderna, sino que se apoya exclusivamente en el estado y condición de los dialectos."

to as many linguistic taxa, namely to Dalmatian, Rumanian, and Sardinian. A definitely less superficial problem instead arises as far as the label "Italy" is concerned. Indeed, the geopolitical label "Italy" cannot correspond to one linguistic taxon, given that it is used here for naming two 'cousin taxa' (see example 1 above). Some further statements by Lausberg can help in understanding—yet not in justifying—such inconsistent use of the label "Italy". In the immediately following lines, Lausberg asks and answers the category question: 'what and how many are the "proper languages" of modern Romania?' To answer this question, the *Ausbau* criterion comes into play, albeit in an intermittent way:

3. "The picture of current Romania *is determined (even the dialects)* by the written languages. These are: Portuguese, Spanish, French, Grison (although without unitary written language), Italian, Rumanian. Catalan still retains a certain importance as a written language." (Lausberg, 1965: 54 [emphasis added]).⁸³

A mix of *Ausbau* and *Abstand* criteria explains the inclusion of Provençal into the 'category' of "proper languages":

4. "For its *cultural services* in the Middle Ages and its *clear differences from French*, Provençal too which was much used in the Middle Ages as a living language—is counted among the proper Romance languages, *although today it is under the influence of written French*." (Lausberg, 1965: 54 [emphasis added]).⁸⁴

At one point, *Abstand* comes back into play as an autonomous criterion, and promotes in its own right (without additional *Ausbau* reasons) the inclusion of three non-literary varieties into the 'category' of "proper languages":

5. "The criterion of written language is not applicable to Sardinian, which is subject today to the influence of written Italian, nor to Dalmatian; nevertheless, both languages are considered as proper Romance languages because their dependence on a written language is not *sufficient* to make us forget their outstanding differences from Italian. And *once the principle of written language has been broken*, with

⁸³ "El cuadro de la Romania actual está determinado (hasta incluso los dialectos) por las lenguas escritas. Estas son : portugués, español, francés, grison (aunque sin lengua escrita unitaria), italiano, rumano. El catalán todavía conserva hoy en día cierta importancia como lengua escrita."

⁸⁴ "Por sus servicios culturales en la Edad Media y sus claras diferencias frente al francés también el provenzal, muy empleado en la Edad Media como lengua viva, se cuenta entre las lenguas románicas propiamente dichas, a pesar de que hoy en día se halla sometido al influjo del francés escrito."

the same reasoning we also consider Rhaeto-Romance as a proper language, even though only Romansch obtained consideration as a written language, and this only within the territory of the Grisons." (Lausberg, 1965: 54 [emphasis added]).⁸⁵

Lausberg's conclusions synthesize the consciously intermittent application of the two ontologically independent criteria:

6. "Therefore, we have an *unequally motivated* series of ten Romance idioms: Portuguese, Spanish, Catalan, Provençal, French, Rhaeto-Romance, Italian, Dalmatian, Rumanian and Sardinian." (Lausberg, 1965: 54-55 [emphasis added]).⁸⁶

The expression "an unequally motivated series" is sufficient to allow one not to consider that "series of idioms" an *Abstand* classification of Romance varieties, nor an *Ausbau* one. Rather, we can recognize in such "series of idioms" an inorganic conglomeration of 'pieces' of two independent classifications, namely the result of an *accumulation* of "idioms" to which is affixed the status of a "proper language" on the basis of two distinct criteria, one applied to some of them, one to the others. For this reason, not only does it not represent an *Abstand* classification in general. In fact, as we have seen (see Section 1.7), a classification is the result of the systematic application of one classificatory criterion to all the items included into the classification itself. In what follows now, I will show that, besides the two forms of the ontological problem (the taxon and category problems) just illustrated above, in Lausberg (1965), the lack of quantitative evidence problem also shows up. Before doing that, it seems appropriate to point out that, despite being logically necessary in order to support the critical convergence scenario, quantitative evidence

Note that in example 5 it seems to be understood that, despite their considerable genealogical distance from Tuscan (which is part of Eastern Romance) as acknowledged by Lausberg (1965:

could probably not be provided by Lausberg due to the lack of quantitative methods at the time.

⁸⁵ "El criterio de lengua escrita no es aplicable al sardo, sometido hoy a la influencia del italiano escrito, ni al dalmático; sin embargo, ambas lenguas se consideran como lenguas propiamente románicas [sic!] por la razón de que su dependencia respecto a una lengua escrita no es suficiente para hacer olvidar sus destacadas diferencias frente al italiano. Y roto así una vez el principio de lengua escrita, con igual razón consideramos también el retorromano como lengua propiamente dicha, a pesar de que solamente el grisón alcanzó consideración de lengua escrita, y ello únicamente dentro del territorio de los grisones."

⁸⁶ "Tenemos, pues, una serie desigualmente motivada de diez idiomas románicos : portugués, español, catalán, provenzal, francés, retorromano, italiano, dalmático, rumano y sardo."

54, see example 1), the Western Romance varieties of "Northern Italy" (i.e. Cisalpine) are not "sufficiently different from Italian" to be considered "proper languages", as Sardinian, Dalmatic, and Rhaeto-Romance instead are. This could seem to be a case of ad hoc exclusion of Cisalpine from the application of the *Abstand* criterion, inexplicably reserved to Sardinian, Dalmatic, and Rhaeto-Romance alone. However, at one point, Lausberg refers to some sort of (*Abstand*) linguistic convergence (but the direction of the convergence is actually not specified) between Gallo-"Italic" and Eastern Romance varieties of Italy, which would additionally support—as a synchronological argument—the inclusion of Gallo-"Italic" within the chapter devoted to the "Italian (language)" (Lausberg, 1965: 72) as part of what Lausberg calls "Northern Italian/norteitaliano".

Firstly, I will quote below some of Lausberg's statements confirming the Western Romance nature of Gallo-"Italic", contrasting it with the Eastern Romance nature of Peninsular (namely Central and Southern) Italy:

7. "[T]he Romance languages must have been deeply determined by the following... respective substrates: Italic dialects... in central and southern Italy; ... Ligurian in the western part of northern Italy and in southeastern France; ... *Celtic* in Gaul, in a part of the Iberian Peninsula, *in northern Italy* (excluding Venice), in Switzerland, in the northern subalpine region..." (Lausberg, 1965: 91 [emphasis added]).⁸⁷

8. "The sphere where the linguistic influence of Gaul extends is called Western Romania. Within Western Romania two partial linguistic zones can be pointed out... The centre of the first zone ... was ... the *Gallia Narbonensis* (south of Gaul)... This first zone includes the following current languages: Provençal (with Gascon), Catalan, Spanish and Portuguese. The centre of the second partial zone of Western Romania seems to have been the *Gallia Lugdunensis*... The northern part of Gaul... the Rhaeto-Romance area and <u>Northern Italy (up to the Apennine)</u> formed this zone. This second zone... embraces the current languages (or <u>dialects</u>): Franco-Provençal, French, Rhaeto-Romance and <u>Northern Italian</u>....

⁸⁷ "[L]as lenguas románicas debieron de ser hondamente determinadas en el conjunto de su aspecto por los sustratos respectivos... siguientes : dialectos itálicos (osco-umbro-sabélico) en el centro y sur de Italia; ... rético y lenguas alpinas preindoeuropeas en la región alpina; ligur en la parte occidental del norte de Italia y en el sudeste de Francia; ... *celta* en la Galia, en una parte de la Península Ibérica, *en el norte de Italia* (con exclusión de Venecia), en Suiza, en la región subalpina del norte...".

Opposite to Western Romania, which is oriented towards Gaul, there is Eastern Romania, which is oriented towards Italy. ... Eastern Romania includes central and southern Italy and the Balkans (Dalmatian, Romanian)." (Lausberg, 1965: 96-97 [italic original; underlining is mine as emphasis]).⁸⁸

Up to this moment, it is evident that the term "Italian/Italy" cannot correspond to a linguistic taxon in Lausberg (1965), since it is used to name two linguistic areas ("northern Italy" and "central and southern Italy"⁸⁹) whose respective geolects have two distinct ancestors (Western and Eastern Romance respectively).

Conversely, I will now quote some of Lausberg's statements where some *Abstand* arguments are understood—yet not made explicit—which would support grouping Gallo-"Italic" with Peninsular geolects into one "Italian" group.

9. "Since about the end of the 2nd century AD, the border between Eastern and Western Romania ran through the Apennine mountains range. The territorial alteration carried out by the Germans did not allow this *linguistic border* to be consolidated, which was already beginning to take shape. With this they contributed to the preparation of the future birth of the Italian nation, although *the linguistic differences that already separated the north and south of Italy persisted*." (Lausberg, 1965: 102 [emphasis added]).⁹⁰

However, Lausberg does not specify *what* and *how many* would be the newly shared linguistic traits that 'count more' than all the inherited "differences that persisted" between the Western and the Eastern Romance varieties of Italy, nor does he explain *why* they should 'count more' to justify for Gallo-"Italic" the ascription to "Italian language". Neither does Lausberg specify how the new Longobard (Germanic) presence itself could make Gallo-"Italic" become *less Western Romance*,

⁸⁸ "La esfera por donde se extiende el influjo lingüístico de la Galia recibe el nombre de Romania occidental. Dentro de la Romania occidental se pueden señalar dos zonas lingüísticas parciales... El centro de la primera zona... fue... la *Gallia Narbonensis* (sur de la Galia)... integrada por *Aquitania* e Iberorromania... Esta primera zona abarca, pues, los siguientes idiomas actuales : provenzal (con gascón), catalan, español y portugués. El centro de la segunda zona parcial de la Romania occidental parece haber sido la *Gallia Lugdunensis*... Formaban parte de esta zona el norte de la Galia, por un lado, y por otro, la Retorromania y el norte de Italia (hasta el Apenino). ... Esta segunda zona de la Romania occidental abraza... las actuales lenguas (o dialectos) : francoprovenzal, francés, retorromano y norteitaliano. ... 2) Frente a la Romania occidental, orientada hacia la Galia, está la Romania oriental, orientada hacia Italia. La frontera entre la Romania occidental y oriental corre a lo largo de los Apeninos... (de La Spezia a Pesaro) y continuaba... hacia Oriente... La Romania oriental abarca... el centro y sur de Italia..., los Balcanes (dálmata, rumano)."

⁹⁰ "La frontera entre la Romania oriental y occidental, desde aproximadamente el final del siglo II p.C., corría a través de la cordillera de los Apeninos. La alteración territorial efectuada por los germanos no dejó que se consolidase esta *frontera lingüística* que comenzaba ya a perfilarse. Con ello contribuyeron a que se preparase el futuro nacimiento de la nación italiana, si bien subsistieron las *diferencias lingüísticas* que ya entonces separaban el norte y sur de Italia."

namely lose its inherited Western Romance traits (and those specific to the "second zone" mentioned in example 8). Accordingly, no evidence is provided about the presence itself nor of the quantitative prevalence of such unspecified linguistic traits in comparison to the inherited Western Romance ones. It seems that one can also exclude that sharing literary models can be invoked as a cause for a possible critical linguistic convergence after the 6th century Longobard (Germanic) settlement:

10. "In the 12th-13th century (apart from spiritual poetry written in the Lombard-Venetian dialect) the literature of Northern Italy is totally oriented towards [Transalpine] Gaul: the lyric [literature] speaks in Provençal, the epic [literature] in Italo-French [francoitaliano⁹¹]." (Lausberg, 1965: 102).⁹²

The point here is that it would be proper to motivate *by means of quantitative data* why the *Abstand* criterion (i.e. the linguistic "differences", see quote 5 above)—which is "sufficient" to guarantee to Sardinian, Dalmatic, and Rhaeto-Romance the status of independent and separate language from the "Italian language", among the other languages⁹³—is not "sufficient" to guarantee the same status to Cisalpine (the category problem). Lausberg's statements are of quantitative nature, but no quantitative evidence is provided in order to support them.

In summary, Lausberg's "classification" shows four inconsistencies:

 Abstand and Ausbau criteria unpredictably decide the grouping of varieties within the same unidimensional "classification". Indeed, at a higher categorial level (example 1), varieties are grouped by the genealogical (which is an Abstand) criterion, while at a lower categorial

⁹¹ In this expression too, the *Ausbau* meaning of the 'Italo-/-italiano' element has to be recognized. "*Francoitaliano* epic [literature]" should be intended as 'a mix of French and *a variety spoken in the geopolitical area of Italy*', as it appears from the logical combination of the following two examples taken from Benincà, Parry & Pescarini (2016), the second of which shows Cisalpine and French as parts of a taxon that excludes Peninsular geolects. (1.) "In the fourteenth and fifteenth centuries, a literary current connected to the popularization of the French romances in northern Italy used a language (in fact a set of linguistic varieties closely linked to each other and to French) called 'franco-italiano', 'franco-veneto', or 'franco-lombardo'. This language was a mixture of lexical and morphological features from *northern* dialects and literary and regional French, unstable but quite well defined". (2.) "[L]et us sum up those characteristics that are shared by all northern Italian varieties, marking northern Italy as part of an innovative sub-area of Romance *comprising French, the dialects of northern Italy*, Friulian, Ladin, and Romansh. From now on we will term this sub-area '*northern Romance'*." (Benincà, Parry & Pescarini, 2016: 187 [emphasis added]).

⁹² "Pero el norte de Italia en el siglo XII-XIII (prescindiendo de una poesía espiritual escrita en dialecto lombardoveneciano) está totalmente orientado, desde el punto de vista literario, hacia la Galia : la lírica habla en provenzal, la epopeya en francoitaliano."

⁹³ Example 4 could be interpreted as if Lausberg deems *Abstand* sufficient to also guarantee a taxonomic autonomous status to Occitan with respect to French.

level (example 3) varieties are grouped unpredictably by either *Abstand* or *Ausbau* criteria (this is a manifestation of the taxon problem);

- Some sets of varieties are given the status of "proper languages" by the *Ausbau* criterion (French, Spanish, etc.), while some others by the *Abstand* criterion (Sardinian, Dalmatian, Rhaeto-Romance) (this is a manifestation of the category problem);
- 3) Cisalpine is simultaneously ascribed to Western Romance based on the genealogical criterion, and to the "Italian" language based (possibly, see example 3) on the *Ausbau* criterion and on the synchronological criterion, namely also based on the effects of contact after splitting (this is a twofold manifestation of the taxon problem);
- 4) A quantitative statement that would (allegedly) support synchronologically grouping Cisalpine with Peninsular geolects rather than with present-day Western Romance geolects is implicit (i.e. 'Cisalpine became linguistically *more* similar to Peninsular geolects than to uncontested Gallo-Romance geolects', see "second zone" mentioned in example 8). However, no quantitative evidence is provided in order to support such a synchronological grouping (this is a manifestation of the lack of quantitative evidence problem).

For all these reasons, Lausberg's classification is not informative, hence it is not useful for scientific purposes and should be rejected.

Other possible considerations concerning Lausberg (1965) will be developed in Chapter 3, mainly dedicated to von Wartburg's work (1967), wherein some similar statements are made.

2.2.2. The 'inertial use of the nomenclature' problem

In Sections 2.1.1 and 2.1.2, we have seen that the 'mixed criterion' scholars (e.g. Lausberg 1965 that I have just analysed) ascribe some geolects to a given group in virtue of an *Abstand* criterion, and ascribe other geolects to the same or to another group of the same unidimensional "classification" in virtue of an *Ausbau* criterion (taxon problem). We can define this as a problem of fallacious *grouping*. However, this problem of grouping has a counterpart at the conceptually distinct level of nomenclature (i.e. of labelling) which deserves to be considered in its own right. Indeed, ascribing both Gallo-"Italic" and Peninsular geolects to a group labelled 'Italo-Romance', based respectively on *Ausbau* and *Abstand* arguments, implicitly also means agreeing that the label 'Italo-Romance' can be used in both an *Abstand*-based and an *Ausbau*-based classification of geolects. However, this is arguable as two distinct classificatory criteria applied to the same set of

items should be expected to result in two different distributions of the items among the sub-groups, so that the sub-groups partially overlap reciprocally. In such a probable case, the nomenclature that matches (and informs about) one of the two sub-groupings cannot match (and inform about) the other one. Indeed, as we have seen even in the pro-Italo- studies (e.g. von Wartburg 1967, Lausberg 1965, Pellegrini 1975, 1992), not all the varieties that are currently heteronomous towards Italian derive from the same proto-language (Proto-Italo-Romance). Therefore, it is misleading to use one label (Italo-Romance) for indicating both (1.) the group of geolects coming from the same protolanguage and (2.) the group of geolects that are heteronomous with respect to Italian. What I would like to stress in particular in the present section is that ascribing Gallo-"Italic" to a group labelled 'Italo-Romance' should be contested even in a case (whose existence we can take as a working hypothesis) in which a pro-Italo- author correctly recognizes the conceptual distinction between Abstand-based and Ausbau-based classification and their mutual independence, and yet however uses *inertially* and *knowingly* the typically genealogical nomenclature ('Italo-Romance', 'Gallo-Romance', etc.) in a genuine and consistent Ausbau-based classification (see "standardology" in Posner 1996) for expressing the current sociolinguistic relationship among geolects. Identical criticisms can be moved against the possible use of one nomenclature for expressing both a genealogical and a synchronological grouping.

An example taken from the domain of plants can help us in understanding why the inertial use of the nomenclature should be avoided. 'Poaceae' ("formerly called Gramineae") is a botanic label ("monocotyledonous flowering plants")⁹⁴, while 'cereal' is a commercial/gastronomic label ("a plant—such as a grass—that produces grain that can be eaten")⁹⁵. It turns out that a few plants that are not poaceae are considered cereals (e.g. buckwheat)⁹⁶ and some poaceae are not normally listed among cereals, in that they are not used to make flour or for other gastronomic uses (e.g. Ammophila arenaria, i.e. 'marram grass' or 'beach grass'). Hence, the two labels are not considered interchangeable within either classification (botanic or gastronomic). In particular, the label 'cereal' is not used in the botanic nomenclature.

⁹⁴ 2022 Enciclopædia Britannica https://www.britannica.com/plant/Poaceae

⁹⁵ The Britannica Dictionary https://www.britannica.com/dictionary/cereal

⁹⁶ See for example <u>https://www.thefullhelping.com/buckwheat-cereal-and-almond-milk/</u>, or <u>https://rbitzer.com/breakfast-buckwheat-4/</u>. For the botanic definition of buckwheat see <u>https://www.britannica.com/plant/buckwheat</u>

2.2.3. THE 'DISHARMONIOUS USE OF THE LABEL *ITALIAN*' PROBLEM

For the sake of completeness, I anticipate here a short presentation of a further problem concerning labelling, which I will introduce in more detail in Section 3.1.2. This is the disharmonious use of the label 'Italian' along with typically genealogical labels. I will show that von Wartburg (1967), differently from e.g. Pellegrini (1975, 1992) and Loporcaro (2009), avoids the questionable inertial use of the genealogical label 'Italo-Romance' for naming a group-the set of Cisalpine plus Peninsular geolects—(purportedly) identified on the basis of the synchronological criterion. In fact, he labels this purported group "Italian". However, I will also argue that by doing so he did not solve the underlying (second form of the) taxon problem (see Section 2.2.1.1) that affects his "classification", since, in his study, "Gallo-Romance", "Ibero-Romance", "Rhaeto-Romance", and the purported group that he labels "Italian" are represented as taxa placed at the same categorial level of the same unidimensional "classification" (see von Wartburg 1967, map 10, reported below in Figure 3.2). Rather, differently from the abovementioned studies (e.g. Pellegrini 1975, 1992; Loporcaro 2009), von Wartburg simply makes (the second form of) the taxon problem visible in the nomenclature. Von Wartburg then, besides inconsistently mixing two classificatory criteria (the second form of the ontological problem), also mixes the labels proper to those two different classifications (genealogical and synchronological) into the nomenclature of one unidimensional "classification" (this is the disharmonious use of the label *Italian* problem). This makes it unclear for the reader who is not previously informed that the author is mixing the criteria as to what kind of classification the author is presenting. This means that, independently from the major problem concerning grouping (i.e. the second form of the ontological problem) affecting the "classification", the nomenclature itself should be rejected in its own right, since it is uninformative, hence useless for scientific purposes.

To sum up the problems concerning labelling, *Abstand*-based and *Ausbau*-based classifications should be expressed by two distinct nomenclatures, and within the *Abstand* perspective, two distinct nomenclatures should be used for a genealogical classification and for a synchronological classification; and, the nomenclature of each of these different classifications should be formally 'harmonious', so that each label be easily recognisable as part of one or of another nomenclature/classification.

75

2.3. ANOTHER ISSUE IN THE LITERATURE: THE 'A PRIORI EXCLUSION' PROBLEM

This problem should be considered separately from the previous ones since, by definition, it cannot be considered proper to the pro-Italo- tradition. Indeed, it exactly consists of excluding Gallo-"Italic" from the list of varieties analysed and classified in some formally *Abstand*-based quantitative studies, so that no ascription at all is proposed in those studies for Gallo-"Italic".

Indeed, some formally 'genuine' Abstand-based classifications proposed in the scholarly literature are obtained by applying an Abstand classificatory criterion to a set of geolects that have been previously selected (mainly) by an Ausbau criterion, namely to the standard varieties or to a restricted number of varieties that enjoy some form of official recognition (see also Tamburelli 2014) and/or, in a minority of cases, previous scholarly acknowledgment as a separate Abstandlanguage (e.g. Sardinian, Dalmatic). In these classifications, grouping does not result empirically (Bailey, 1994: 6-9; see Section 1.7), namely a posteriori with respect to the observation of all the items (in our specific case 'of all the geolects') in the world that present the conditions of applicability of the Abstand criterion itself; rather, the higher categorial grouping within the Romance family is decided a priori, based (mainly) on Ausbau criteria. Hence, despite the fact that the resulting classification could be formally considered as *Abstand*-based, it turns out to be a very *incomplete* one, so that—in the particular cases that I will show—it cannot help us in determining an Abstand-based taxonomic placement for Gallo-"Italic" (nor for any other non-standard geolect excluded). A fictitious parallel example of the a priori exclusion problem could be seen in the genuine botanic classification of Princess Wlutza's garden flowers, that cannot in any case be regarded as a 'botanic classification of *flowers*'. Indeed, botany does not only *classify* flowers but also defines what a flower is, and identifies empirically what entities in the world correspond to the definition of 'flower'. It turns out that in the botanic classification of Princess Wlutza's garden flowers, several kinds of flowers would have been previously excluded from the "classification" (observation, description, comparison, etc.) based on a non-botanic criterion, namely by the fact of not having been chosen by the Princess's aesthetical taste for being part of her garden. Another fictitious example could be the genuine zoological classification of Bkujyt Circus animals, that cannot in any case be considered a 'zoological classification of animals'.

In order to exemplify the '*a priori* exclusion' problem, I will limit myself to analyse the studies mentioned in Posner's (1996), where some of the scholarly proposals of classification of Romance languages are presented, starting with Pei (1949).

After criticising the arbitrariness with which linguists have, up to that point, decided what isoglosses (*Abstand*) determine the sub-grouping of Romance geolects, Pei proposes what he considers a more "scientific methodology":

1. "The time has perhaps come to replace this somewhat haphazard methodology of classification with some system of measurements that will take into account not merely one or two individual features, but the sum total of the important features characterizing Romance languages *and dialects*, for the purpose of *defining more clearly the relationships among them, and between any one of them and the Latin* from which they issued" (Pei, 1949: 135-136 [emphasis added]).

Then Pei continues:

2. "In one division of linguistic description, and one only, has some attempt been made to apply a thoroughly scientific, statistical method. This field is vocabulary. ... This statistical method has unfortunately never been applied to the other divisions of linguistic change: phonology, morphology, syntax. ... What it is proposed to demonstrate [in the present study] is that the comparative statistical method can perhaps be applied on a far more extensive scale than has hitherto been the case. By taking the various general processes of change in the fields of phonology, morphology and syntax, assigning to them some sort of numerical value, and applying this value to the phenomena as they occur in the individual languages *and dialects*, we may possibly be able to achieve a more precise basis of comparison..." (Pei, 1949: 136-137 [emphasis added]).

Not surprisingly, given the *Abstand* interest of Pei, in both examples 1 and 2, "dialects" (namely non-standard varieties) are also regarded as relevant to the desired analyses. However, the project of comparing "languages and *dialects*... on a far more extensive scale" according to such exclusively *Abstand* criteria is postponed to some further research. In the current study (Pei, 1949), the author can work with a very partial sample:

3. "Let us give a brief and *very incomplete* demonstration of this tentative methodology, …we shall restrict ourselves to… *seven of the principal Romance varieties*: *standard literary* French, Spanish, Italian, Portuguese and Rumanian, *standard literary* old Provençal, and Logudorese Sardinian. A fuller demonstration, including… a larger number of Romance varieties, is reserved for a lengthier work" (Pei, 1949: 137 [emphasis added]).

Hence, what is obtained from Pei (1949) is a pioneering attempt of *Abstand* classification involving, for the moment, *some* Romance linguistic varieties, namely the usual tiny number of the standardized ones (with the sole exception of Logudorese).

Then, Posner (1996) mentions Muljačić's (1967/2020) classification as follows:

4. "Žarko Muljačić's classification of *twelve languages* mixes diachronic and synchronic data, using forty plus-or-minus parameters from different levels (of which sixteen concern phonological changes familiar from Stammbaum classifications). Many of these... differentiate one language from the others, either as innovations or as archaisms..." (Posner, 1996: 199).

In this case, too, all the "twelve languages" that are compared and grouped based on these *Abstand* parameters⁹⁷ enjoy some sort of official or previous academic recognition as "languages": Sardinian, French, Franco-Provençal, Portuguese, Occitan, (Engadine) Rhaeto-Romance, Catalan, Spanish, Rumanian, Friulian, Italian [and Dalmatic (Vegliot)].⁹⁸

The same issue can be observed in another study mentioned by Posner (1996), namely Heles Contreras (1963):

5. "[Contreras] applied to *seven Romance languages* the... classic morphosyntactic indices devised by Joseph Greenberg (measuring, for instance, the relative degree of synthesis versus analysis, of agglutination, derivation and compounding etc. in constructions)" (Posner, 1996: 200 [emphasis added]).

As in the other cases discussed above—excluding Sard⁹⁹—all the other "languages" compared are recognized as official or literary languages: Portuguese, French, Sardinian, Catalan, Spanish, Italian, and Rumanian (Posner, 1996: 201).

Among the quantitative classificatory studies presented in Posner (1996), particularly worth mentioning is Pellegrini's "attempt of a new experimentation" (Pellegrini, 1970: 222), consisting of including three non-standard Romance varieties spoken in the politically Italian territory in the list of varieties that Muljačić's (1967/2020) quantitative research had previously classified (mentioned in example 4 above). Leaving to future research an appropriate analysis (and desirable integration/completion) of Pellegrini (1970), it is here sufficient to mention the fact that among the three added varieties, no Gallo-"Italic" variety is included, despite the notoriously disputed—hence

⁹⁷ Here are the Muljačić's linguistic plus-or-minus parameters mentioned in Posner (1996: 199-200): "use of an IPSEderived definite article, [use of] two forms of negative NON..., enclisis of the definite article..., use of nominal case forms..., nasal phonemes..., existence of central vowels..., three-term set of demonstratives..., prepositional accusative...".

⁹⁸ In this review, Posner (1996) does not explicitly mention Dalmatic among the languages analysed in Muljačić's study.

⁹⁹ In 1963 Sardinian was not still officially recognized as a minority language of Italy.

in need of solutions—taxonomic placement of Gallo-"Italic", which seems to be one of the main Pellegrini's academic interests (e.g. Pellegrini 1970, 1975, 1992; see Sections 2.1.1.2.1, 2.1.1.2.2 and 2.1.1.2.3 above). Therefore, the interesting results of Pellegrini's (1970) quantitative study, like the ones of the other abovementioned studies, cannot help us in determining an *Abstand*-based taxonomic placement for Gallo-"Italic".

The structural (Abstand) classificatory criterion in use in all the abovementioned studies could ideally be applied to all the Romance geolects regardless of their Ausbau status and/or previous academic acknowledgment as a separate Abstand-language, contributing in this way to compileempirically-an Abstand-based classification of Romance geolects, as it seems to be the intention of these authors. As a matter of fact, instead, the Abstand criterion results as being subordinated to the Ausbau criterion (or, in a few cases, to previous scholarly Abstand-language status recognition). Said differently, the Ausbau criterion, and to a lesser extent previous literature, decides the 'a priori exclusion' of the vast majority of the geolects among those that match the conditions of applicability of the Abstand classificatory criterion itself. In this way, such a numerically important absence annuls the possibility of an *exhaustive* classification of geolects, since entire groups risk not being identified empirically and placed at the proper categorial level. One can imagine how few African or Amerindian linguistic groups would be identified in the literature, and what an oversimplified family tree would represent such a grouping, if only the few historically highly standardized written varieties were compared and grouped by linguists. More radically, no prehistoric language classification would be possible, since, by definition, none of the pre-historic languages were written, nor likely to be highly standardized (at least in the usual scholarly sense of this expression), and in any case nothing can be known about the degree of their possible standardization (in whatever broad sense) due to the absence of the practice of writing. More generally, the fact that the set of items that are the object of these purportedly "new" proposals of "classification" was not identified empirically, but pre-defined on the basis of previous literature, prevents these seemingly "new" proposals of "classification" to reveal some possible really new groupings that previous research had not found, and that new research should be free to reveal.

2.4. PRELIMINARY CONCLUSIONS

In Chapter 2, I have presented and exemplified the different formal inconsistencies affecting the various proposals of pro-Italo- classification that the literature offers, which are the following: (a.)

the ontological problem, conceptually distinguishable as two concomitant problems, namely the category problem and the taxon problem; (*b.*) the 'ad hoc' problem; (*c.*) the 'lack of quantitative evidence' problem; (*d.*) the 'inertial use of the nomenclature' problem; (*e.*) the 'disharmonious use of the label *Italian*' problem; (*f.*) the 'a priori exclusion' problem.

I have focused my attention especially on that section of the traditional Romance linguistic literature that I have named 'the mixed-criterion contributions', definable as such in that they show (at least) the effects of the ontological problem. These studies present the following characteristics: (1.) they are frequently cited in more recent scholarly literature as authoritative sources for the classification of Romance varieties; (2.) they describe and compare the vast majority of the varieties that they consider in terms of sharing vs. non-sharing of isoglosses (i.e. Abstand), and on this ground they group and label them; (3.) they describe Gallo-"Italic" as sharing all the isoglosses that in their own pages are considered relevant in distinguishing Western Romance, and in particular Gallo-Romance, from Italo-Romance; and (4.) some sociological (which is an aspect of Ausbau) or geopolitical arguments are eventually presented in these studies, determining the ascription of Gallo-"Italic" to Italo-Romance instead of to the expected Gallo-Romance. However, we have seen that *Abstand* and *Ausbau* correspond to two independent analysis perspectives (two unrelated dimensions), and establish two independent classifications or, if at all, a bidimensional one. Then, by mixing these two independent classificatory criteria within a formally unidimensional "classification", these authors contravene an important principle of classificatory science (see Sections 1.5 and 1.7). Therefore, their "classifications" suffer from what I have termed the 'ontological problem'-in the twofold form of the 'category problem' and the 'taxon problem'—and the 'ad hoc problem'. In particular, the category problem—i.e. the polysemic use (Abstand and Ausbau) of the category name 'language'-makes the terms 'language' itself, 'dialect', and 'Italian' ambiguous, which in turn makes unintelligible a series of other terms and statements in the literature. The taxon problem, on the other hand, makes the taxon labels (Gallo-Romance, Italo-Romance, etc.) not informative from the Abstand nor from the Ausbau point of view. The ad hoc (hence unpredictable) application of one of the two criteria to just a subset of items results in a non-organic conglomeration of 'pieces' of two independent classifications, and not in one classification (this is the ad hoc problem). Because of either the ontological problem or the ad hoc problem, the "classifications" proposed are *devoid of informative power*, hence not useful for scientific purposes, and for this reason they have to be rejected.

Three other problems, albeit not inherently linked to the practice of mixing criteria, show up in several 'mixed criterion' studies, adding to the ontological and the ad hoc problems.

The 'lack of quantitative evidence' problem is observable when 'mixed criterion' scholars refer to some purported effects of linguistic convergence of Gallo-"Italic" upon Tuscan/Italian as an additional *Abstand* argument for grouping Gallo-"Italic" with Peninsular geolects and not with uncontested Gallo-Romance. These scholars make a quantitative statement in nature but they do not provide quantitative evidence that Gallo-"Italic" actually did become more similar to the bordering Peninsular second-cousin varieties than to the bordering Gallo-Romance sister varieties. Besides the 'lack of quantitative evidence' problem, these scholars' studies concomitantly show the 'second form of the taxon problem', which makes the taxon labels (Gallo-Romance, Italo-Romance, etc.) not informative from the *genealogical* nor from the *synchronological* point of view. The 'inertial use of the nomenclature' problem is observable when the typical genealogical nomenclature (in the current specific case, a member of it, i.e. 'Italo-Romance') is used to label a group identified by the *Ausbau* criterion or by the synchronological criterion. The entire nomenclature results as not being informative from any of those three standpoints. It can be seen as the nomenclature counterpart of the ontological problem, which instead concerns grouping.

The disharmonious use of the labels (in the current specific case 'Italian') makes it unclear what kind of classification the author is presenting.

A final problem appears in the literature, which adds to the others in making the classification for Gallo-"Italic" one in need of new consideration: the 'a priori exclusion' problem. Some scholars, indeed, by some formally genuine *Abstand* criteria, have classified a very limited number of geolects, previously selected (mainly) by an *Ausbau* criterion. In this way they have excluded a priori most geolects that presented the conditions of applicability of the *Abstand* criterion itself, finally annulling the possibility of constructing *empirically* a complete *Abstand*-based classification of Romance geolects, in which all the groups and sub-groups, at any categorial level, are identified empirically. They have provided instead very partial *Abstand* classifications that cannot in any case tell us anything about classification of Gallo-"Italic".

In Chapter 3, I will show that the 'lack of quantitative evidence' problem also shows up in von Wartburg (1967). What makes that study worthy of a separate analysis is the fact that there this problem does not seem to add to the problems that are proper to the mixed criterion tradition,

81

namely the ontological and (possibly) the ad hoc problems.¹⁰⁰ Indeed, von Wartburg does not seem to make recourse to *Ausbau* arguments in order to support his pro-Italo- stance, meaning that he does not seem to mix *Abstand* and *Ausbau* criteria. This fact makes von Wartburg (1967) an ideal representative of the pro-Italo- *Abstand*-based claims found in the literature, since in this work the *Abstand*-based pro-Italo- claims cannot, or at least should not, intertwine ambiguously with *Ausbau*-based arguments. This in turn will allow me to describe and analyse more clearly such *Abstand*-based claims, and motivate more clearly the reasons for rejecting the pro-Italo-synchronological stance based on them.

¹⁰⁰ As I anticipated and will further probe in the next section, von Wartburg mixes the genealogical and the synchronological criteria (which I termed 'the second form of the taxon problem') but he does not seem to mix *Abstand* and *Ausbau* criteria.

CHAPTER THREE Shortcomings in Von Wartburg (1967), 'La fragmentation Linguistique de la Romania'

3.1. INTRODUCTION

As presented in Section 1.6.2, von Wartburg (1967) is the only pro-Italo- 'classical' study¹ among the ones that I have looked at that proposes a classification of Gallo-"Italic" formally based on exclusively *Abstand* criteria, without apparent recourse to *Ausbau* (i.e. sociological, geopolitical, literary) arguments. In his study, von Wartburg (1.) intends "to identify the [linguistic] traits that characterise the primitive differentiation of the Romance languages" (1967: 66-67, note 9)²; (2.) he groups the Romance geolects on the basis of the substrate effects and the changes occurring before and during the first three centuries after the "Great [Germanic] Invasions"; (3.) he groups the Romance geolects that show "identical changes... provided that it is possible to ascertain a geographical and historical concordance between them" (1967: 67-68, note 9)³; (4.) all along his study, von Wartburg describes the Gallo-"Italic" geolects⁴ as sharing all the isoglosses that, in his view, distinguish Western Romance, and in particular Gallo-Romance, from Italo-Romance and the rest of Romania; (5.) however, he also repeatedly refers to Gallo-"Italic" (and to the other varieties of "Northern Italy"⁵) as if it *was not* Gallo-Romance *nor* Western Romance. In map 10

¹ As presented in Section 1.6.2, footnote 24, by 'classical studies' I mean the ones written in the 19th and 20th centuries, and whose proposals of classification for Romance languages are normally considered authoritative in more recent studies (see for instance Posner 1996 and Loporcaro 2009).

² "…dégager… les traits qui caractérisent la différentiation primitive des langues romanes."

³ "...deux changements... identiques... à condition de pouvoir établir entre eux une concordance géographique et historique."

⁴ Von Wartburg does not refer to Gallo-"Italic" as a whole by the label *Gallo-Italic* (he only ones mentions "Sermons *gallo-ital.*", 1967: 30 [emphasis added]). He rather mentions separately "[les parlers de] le Trentin, la Lombardie, le Piémont, l'Émilie, la Romagne, la Ligurie".

⁵ In Wartburg (1967), "the speeches of Northern Italy" (les parlers de l'Italie du Nord) correspond to the Cisalpine (see Figure 1.1 above) excluding Friul and the Dolomitic Ladin valleys, which instead are part, with Romansh, of "Rhaeto-Romance". In the present chapter devoted to von Wartburg, I will use the expression "Northern Italy/-ian" according

(see Figure 3.2 below), von Wartburg finally groups present-day Gallo-"Italic" with Peninsular geolects in a group labelled "Italian", in opposition to Gallo-Romance (and other groups).

As briefly anticipated in Section 1.6.2, this apparent inconsistency could be explained by the fact that, in von Wartburg (1967), Gallo-"Italic" seems to be considered Western Romance and Gallo-Romance in terms of genetic development, but would have then *become* "Italian" (1967: compare maps 9 and 10, reported below in Figures 3.1 and 3.2) due to a linguistic convergence towards Tuscan starting during the Middle Ages.

In the next Sections 3.2 and 3.3, I will show that this 'double classification' is not without problems. I have already briefly introduced three of these problems—referring them not only to von Wartburg—in Sections 2.2.1 (the 'lack of quantitative evidence' problem and the second form of the ontological problem) and 2.2.3 (the 'disharmonious use of the label *Italian*' problem). However, observing and describing them—beside other problems—in an individual study which does not make recourse to *Ausbau*-based arguments will allow me to analyse them in a clearer way. In order to facilitate the reading of Sections 3.2 and what follows, it seems to me useful to concisely sum up their content below in Sections 3.1.1 and 3.1.2.

to von Wartburg's use. For the sake of brevity, in some cases I will replace it by the non-Wartburgian expression 'Cisalpine'.



Figure 3.1. "The Romance domain at the beginning of the 3rd century" (von Wartburg, 1967, map 9).



Figure 3.2. "The present-day Romance domain" (von Wartburg, 1967, map 10).

3.1.1. ISSUES SPECIFICALLY CONCERNING GROUPING

In summary, I will argue that (i.) the possible presence of recent effects of the convergence of Gallo-"Italic" towards the Italian literary language (even assuming that such a convergence started in the 13th century, see below Section 3.2.7 example 1) cannot affect the genealogical classification of Gallo-"Italic", namely its ascription to the large sub-groups (Western Romance, Gallo-Romance) that, even in von Wartburg (1967), are identified on the basis of substrate effects and "primitive" changes; (ii.) so that, the fact that von Wartburg ascribes Gallo-"Italic" to a taxon named "Italian", purportedly identified on the basis of the effects of recent linguistic convergence, and places the taxon "Italian" at the same categorial level of a genealogically-identified taxon like Gallo-Romance (see von Wartburg, 1967 map 10, reported in Figure 3.2), can be seen as an expression of the 'second form of the taxon problem' (see Section 2.2.1.1), namely of the flawed practice of mixing, in the same unidimensional "classification", two distinct-yet both Abstandclassificatory criteria, namely the genealogical and the synchronological one (see Section 1.6.2; as related concepts to the one of 'synchronological criterion', see "areal typology" in Dahl 2001: 1456, "(geo)typological" in Goebl 2008; see also Manoliu-Manea 1985, and McMahon & McMahon 2005); (iii.) I will also argue that, even derogating to the argument of point i, i.e. even assuming as a working hypothesis that one can legitimately mix the genealogical and the synchronological criteria in a single unidimensional "classification", the fact remains that the contact-based qualitative 'arguments' presented by von Wartburg seem ineffective or insufficient to support the 'no-longer-pro-Gallo-' synchronological identity of Gallo-"Italic". In fact, of the three lately borrowed⁶ purportedly 'Italianizing' traits that von Wartburg enumerates (a. loss of Latin -S—see Section 3.2.7, b. "the modification of stressed vowels in open syllable", and c. the palatalization of /l/ in muta cum liquida clusters), none can be considered as an 'anti-Gallo-Romance' trait, i.e. as replacing/obscuring any inherited Western Romance or Gallo-Romance traits (see Sections 3.2.6 and 3.2.7; but see in Section 3.2.7 some considerations about the questionable classificatory relevance of the loss of -S in von Wartburg 1967); and (iv.) von Wartburg did not say why these possible "Italian" traits would count more; points *iii* and *iv* equate

⁶ I will disregard as an overabundant argument here questioning as to whether the /-s/ loss should be necessarily interpreted as a loan from Peninsular geolects. See Hull 1982/2017; see also Campbell 1998/2006 on the frequent occurrence of /-s/ weakening/loss in the world's languages and consequent weak classificatory value of this change.

to saying that he did not provide qualitative evidence, from Gallo-"Italic" dialectology and philology, showing that such a linguistic convergence consisted in the loss of (at least) most Western and Gallo-Romance traits and their replacement with Italo-Romance inherited traits or innovations. Such (missing) qualitative evidence could possibly explain (recall, not 'justify', see point *i* above) his proposal of classification (von Wartburg 1967, compare maps 9 and 10, reported in Figures 3.1 and 3.2; see Section 3.2.7 bullet point *iii*); (v.) moreover, he did not specify the quantitative value of the convergence, namely he did not measure how much the borrowed traits would be pervasive—or scant—in the present-day lexicon (this is the lack of quantitative evidence problem). Such specification could ultimately explain (but, again, not 'justify') his proposal of classification despite the paucity of the qualitative arguments presented in points *iii* and *iv*. The issues in point *iv* make von Wartburg's "classification" *non-falsifiable*; the issues in point v make it unsupported by empirical evidence. For all these reasons, von Wartburg's proposal of "classification" should be rejected. As we have seen in Section 2.2.1, all these considerations also apply to 'mixed criterion' studies (e.g. Loporcaro 2009, see Section 2.2.1.2) where, beside the Ausbau-based arguments, it is also claimed that a linguistic convergence (Abstand) of Gallo-"Italic" towards the Italian literary language took place during the past centuries, which is understood to have made present-day Gallo-"Italic" linguistically more similar to Italo-Romance than to uncontested Gallo-Romance. This claim (the critical convergence scenario) is presented by these authors as an additional Abstand-based pro-Italo- (purported) 'argument' beside the Ausbaubased ones, but the possible effects of such a convergence on modern-day Gallo-"Italic" geolects are actually not quantitatively specified.

3.1.2. ISSUES SPECIFICALLY CONCERNING LABELLING

Some additional and independent issues, specifically concerning the labelling of "Northern Italy" geolects, complicate the picture of von Wartburg (1967). Firstly, even assuming as a working hypothesis that a critical convergence or even a full-fledged language replacement really occurred starting from the Middle Ages, one would expect von Wartburg to label the ancient geolects spoken in "Northern Italy" *before* the alleged critical convergence/replacement occurred as 'Western Romance' and 'Gallo-Romance', as per his own *Abstand* descriptions. Instead, we will see that von Wartburg refers even to those varieties as if they were not Gallo-Romance or even Western Romance in passages devoted to the primitive changes that define these groups themselves (see

Sections 3.2.4 and 3.2.5). This fact makes it unclear what the labels 'Western Romance' and 'Gallo-Romance' (and the rest of the nomenclature) mean in von Wartburg's study. In further research, I will shortly propose a possible interpretation of this problematic use of the labelling in von Wartburg (1967) (see some introductory considerations in Brasca 2021, Section 4).

A second conceptually distinct issue arises from the disharmonious use of the label "Italian", specifically as far as it is meant to cover both Peninsular and Cisalpine geolects. As briefly anticipated above and as we will better see in the next sections, von Wartburg seems to refer to heteronomy (Trudgill, 1992), starting in the Middle Ages, as the factor that would explain a supposedly critical Abstand convergence of Cisalpine (including Gallo-"Italic") towards Tuscan/Italian, thus motivating von Wartburg's proposal of grouping Cisalpine with Peninsular geolects in a taxon contrasting with Gallo-Romance. This could suggest that von Wartburg uses, on purpose, the label "Italian" in a synchronological (which is a type of Abstand) sense to refer to a sort of strongly Tuscanising 'Italian Sprachbund'. What can be contested here is that one would expect the label "Italian" to be harmoniously used, if anything, alongside other similar members of a synchronological nomenclature, which should be distinguishable from a genealogical nomenclature. Instead, as we have seen, in von Wartburg (1967) the label "Italian" regularly shows up besides the typically genealogical labels "Gallo-Romance" and "Ibero-Romance", while the expected typical genealogical label(s) corresponding to the geolects of Italy never show(s) up. This suggests that behind the superficial issue of labelling could hide a deeper issue of grouping, namely that von Wartburg is mixing here the genealogical and the synchronological classificatory criteria (which are distinct criteria, albeit both Abstand-based) in a formally unidimensional "classification" (this is the second form of the taxon problem). This being the case, besides having mixed the classificatory criteria—as the 'mixed criterion' scholars did—von Wartburg, differently from these latter, would have also mixed the nomenclatures, making the mix of criteria visible in the nomenclature.

A third conceptually distinct issue concerning labelling appears in von Wartburg's study, specifically concerning the labelling of Peninsular⁷ geolects. Indeed, as presented above, von

⁷ In the current study, '*Peninsular* geolects' are meant to be the Romance geolects spoken south of the Massa-Senigallia line, whose Eastern Romance and Italo-Romance genealogical profile is not a matter of disagreement among scholars. Besides Tuscan and Median geolects, they include the ones that the UNESCO Atlas of Endangered Languages groups into *South Italian* and *Sicilian* endangered languages, respectively corresponding to the ISO codes *639-3 nap* and *639-*

Wartburg (1967) never refers to the geolects spoken in Italy, even south of the Massa-Senigallia⁸ line, as 'Italo-Romance (italoromance/Italoromania)'. For instance, the chapter headings read "Division de la *Galloromania*, Le *rhétoroman*, [L]'*ibéroroman*" (all typical genealogical labels) but "La fragmentation⁹ de l'*Italie*" (a geopolitical label, emphasis added). If, as we have seen above, "Italian" is in von Wartburg (1967) a synchronologically identified taxon resulting from the linguistic convergence of the ancient Gallo-Romance Cisalpine varieties *towards* Tuscan/Peninsular geolects, it turns out that in that study the (indisputably) Eastern Romance Peninsular group remains problematically devoid of a label indicating its genealogical individuality within the Eastern Romance taxon, formally similar to 'Gallo-Romance', 'Ibero-Romance', etc.

This said, von Wartburg describes the Peninsular geolects as a taxon within Eastern Romance, independent from the Rumanian geolects, like in all the more recent scholarly literature that I am aware of, where Peninsular geolects are unanimously defined as 'Italo-Romance'. That's why, henceforth throughout Chapter 3, I will refer to the geolects of Peninsular Italy also by the non-Wartburgian label 'Italo-Romance'. This will also allow me to harmonize the terminology of the current section with the one used in the other sections of this thesis.

Since we have seen that the taxonomic unity of Peninsular geolects in von Wartburg (1967) basically corresponds to the one described by the scholars who group them under the label 'Italo-Romance', and since von Wartburg justifies his grouping Cisalpine and Peninsular geolects in the same "Italian" group by a possible *Abstand* convergence of *Cisalpine towards Tuscan/Italian*, I consider that the fact that von Wartburg did not literally write 'Gallo-"Italic" is classified with *Italo-Romance*' is not a sufficient reason to prevent me from numbering von Wartburg (1967) among the studies that 'classify Gallo-"Italic" *with Italo-Romance*', which are the object of my criticism in the current study. Rather, it seems to add some reasons of further criticism—concerning the labelling—to the ones concerning more properly the grouping.

³ scn.

⁸ Von Wartburg defines this bundle of isoglosses the 'La Spezia-Rimini line'. In the current chapter devoted to von Wartburg's study, I will report the latter definition when quoting von Wartburg but 'Massa-Senigallia line' in my own text, in harmony with the rest of the current study. Please bear in mind that the fine-grained geographical definition of this bundle of isoglosses is not among the aims of the current study, so that these two labels refer to the same entity.
⁹ As a problem in the problem, "fragmentation" presupposes an original linguistic unity of Italy that von Wartburg's

As a problem in the problem, fragmentation presupposes an original inguistic unity of faily that von warburg's descriptions themselves negate. This is the same inconsistency that I have pointed out in Pellegrini (1975), see Section 2.1.1.2.3.

3.1.3. UTILITY OF FALSIFYING VON WARTBURG'S "CLASSIFICATION"

After presenting and discussing von Wartburg (1967), I will elaborate a research hypothesis upon von Wartburg's claim that will allow me to falsify his grouping modern Gallo-"Italic" with Peninsular geolects in contrast with Gallo-Romance in a synchronological "classification". Falsifying von Wartburg's "classification", despite originally dating back to 1950,¹⁰ is particularly useful for present-day and future research. Indeed, von Wartburg's proposal of dividing the Romance domain in a western and an eastern part, once along the Apennine mountains ridge, and today along the southern slopes of the Alps, is normally accepted and re-proposed—with the same classification (e.g. Varvaro 2001, Videsott 2001,¹¹ Loporcaro 2009). As a consequence, most of the recent scholarly studies in linguistics and philology, including those not specifically focusing on language classification, refer to Gallo-"Italic" as a sub-group of Italo-Romance, often as "Northern Italo-Romance" (e.g. GSPL conference 2020; Faraoni 2020; Fanciullo 2018; Garassino et al. 2017; Bernini 2012; Valentini 2012; Filipponio et al. 2010).

3.2. OUTLINE AND DISCUSSION OF VON WARTBURG (1967)

In the five chapters of von Wartburg's study (1967), the author lists and discusses the linguistic "differentiations" that occurred within the "Latin compact domain" (1967: 11) "during the five centuries of common history that the main Roman countries have shared" (1967: 137)¹² and during the following three centuries, after the "Great [Germanic] Invasions" that the Roman Empire underwent. All these differentiations would explain the fragmentation of Romania into "the ten¹³ Romance linguistic domains" of von Wartburg's times (1967: 25). For each of these

¹⁰ In the present study, I cite the 1967 French translation of the original von Wartburg's study *Die Ausgliederung der Romanischen Sprachräume*, published in German in 1950.

¹¹ "[I]n Northern Italy, the originally Gallo-*Romance* dialects <u>have become</u> Gallo-*Italic*; ...[A]round 1000 AD... the Italo-Romance geotype still extended up to the famous La Spezia-Rimini line and... the Gallo-Romance type extended north of this line... During the last millennium, <u>the borders of Italo-Romance have undoubtedly moved</u> towards the north. / [N]ell'Italia settentrionale, i...dialetti, da gallo-*romanzi*, sono diventati gallo-*italici*; ...[I]ntorno all'anno 1000... il geotipo italoromanzo si fermava ancora lungo la famosa linea La Spezia-Rimini e... a nord di essa vigeva il tipo galloromanzo... Nell'ultimo millennio i confini dell'italoromanzo si sono indubbiamente spostati verso nord" (Videsott 2001: 44 [italic original, underline added as emphasis]).

¹² "...au cours des cinq siècles d'histoire commune qu'ont vécus ensemble les principaux pays romans".

¹³ Von Wartburg does not present these "10 linguistic domains" in a clear summarizing list. We can only deduce what they are from some section headings and map 10 ("La Romania actuelle"): "galicien-portugais, castillan, catalan, français, provençal, françoprovençal, rhétoroman, italien, sarde, roumain".

differentiations, von Wartburg provides and discusses a series of hypotheses about their origins, the period of their emergence, and he also reports on their first possible epigraphic or literary attestations. For instance, about the palatalization of Proto-Romance /-kt-/ that shows up in some areas of Western Romania, he provides some pieces of evidence in favour of its interpretation as an effect of a Celtic substrate, presents and discusses some other scholars' criticisms against that "Celtic theory" (1967: 46), and reports some attestations of the palatalization of /-kt-/ in Celtic coins and epigraphs.

Von Wartburg (1967) Chapters III and IV are particularly relevant for the purposes of the present study. In these chapters, von Wartburg lists and discusses the *substrate* effects, the *superstrate* effects, and other (mostly phonetic) changes that he considers the most significant in dividing the Romance domain into the two major parts—Eastern and Western Romania—and in defining the Gallo-Romance sub-group within the Western Romance part.

3.2.1. The Gallo-"Italic" geolects described in von Wartburg (1967): Discrepancy

While discussing and exemplifying the isoglosses that in his opinion oppose the different Romance sub-groups, von Wartburg describes Gallo-"Italic" ("Piémont", "Lombardie", "Emilie", which are part of "Italie septentrionale" or "Italie du Nord", see 1967: 30-34, 36, 38, 42, 44-47) as showing all the isoglosses that, in his own words, oppose Western Romance—and in particular Gallo-Romance—to Eastern Romance. Von Wartburg repeatedly refers to "Northern Italy" as a part of the Celtic pre-Latin Romania¹⁴ (see Section 3.2.3) and mentions its certain Celtic ethnicity as a premise so as to be able to discriminate about the possible "Celtic" origin of some linguistic phenomenon in Romance languages (1967: 47). Consistently with these descriptions and assumptions, in map 9, titled *Romania at the beginning of the 3rd century*, Northern Italy is represented as a part of Western Romania, in continuity with Transalpine Gaul and in opposition to Peninsular Italy, which in turn von Wartburg represents as part of Eastern Romania. Instead, in

¹⁴ A more rigorous—but maybe unnecessarily complicated—formulation of this sentence would be: 'Von Wartburg repeatedly refers to "Northern Italy" as a part of the originally Celtic-speaking portion of the territory that, after romanization, became Romance-speaking and is currently named *Romania*'.

map 10, headed *The present-day Romania*, the author includes Northern Italy in the linguistic taxon *Italian* along with Peninsular Italy and in opposition to Transalpine Gaul (see Figures 3.1 and 3.2). In Sections 3.2.2 and 3.2.3, I will make reference to the passages where von Wartburg describes the Gallo-"Italic" geolects as showing respectively all the isoglosses that, in his view, define Western Romance (passages *a* to *c*) and the effects of the Celtic substrate (passages *d* to *f*). Instead, in Sections 3.2.4 and 3.2.5, I will refer to some statements and section headings that presuppose the Gallo-"Italic" geolects as not being part, respectively, of Gallo-Romance (passages *g* and *h*) and of Western Romance (passages *i* to *n*). Then, in Section 3.2.6, I will refer to the passages where von Wartburg describes the Gallo-"Italic" geolects as showing respectively, of Gallo-Romance (passages where von Wartburg describes the Gallo-"Italic" geolects as showing but he considers the linguistic effects of Germanic superstrate, shared with French and Tuscan but not with the other varieties of Peninsular Italy (passages *o* to *q*). Finally, in Section 3.2.7, I will refer to a passage where von Wartburg describes Gallo-"Italic" as sharing a linguistic innovation with Peninsular Italy, starting from the 13th century and due, in von Wartburg's view, to heteronomy towards the Tuscan literary language (passage *r*).

3.2.2. STATEMENTS ABOUT THE PRESENCE OF WESTERN ROMANCE TRAITS IN THE GALLO-"ITALIC" GEOLECTS

a. In von Wartburg (1967), the treatment of the final Latin -S is defined as one of the three crucial factors in dividing Romania in the two widest areas, the "Western" and the "Eastern" one (1967: 27). It is also said to be "...the clearest, the most significant and the heaviest... of all the phonetic differentiations occurred within Romania"¹⁵ (1967: 24). Von Wartburg hypothesises that Gaul, Iberia and Sardinia show the final Latin -S in their historical varieties, and to different degrees also in the present ones, because these regions of the Empire were Latinized late, hence Latin language arrived there in the form of the language of teachers and bureaucrats, namely in its literary form, presenting a "restored" literary /-s/. This sound had already disappeared in the popular varieties spoken in Peninsular Italy, which were Latinized earlier ("prononciation rustique du latin", 1967: 26). Italic settlers had repopulated Dacia after the exterminations of the Trajan wars (101-106 AD), so that this region shares the lack of /-s/ with the Italic Peninsula and forms Eastern Romania with

¹⁵ "...la plus nette, la plus significative et la plus lourde... de toutes les différenciations phonétiques apparues à l'intérieur de la Romania".

this latter (and Dalmatia, see map 9 reported in Figure 3.1). A series of examples showing the presence of /-s/ in Rhaeto-Romance geolects (e.g. "Engadin *dus*" vs. "Italian *due*", 1967: 26) and pieces of evidence ("traces") of the presence of /-s/ in the Cisalpine geolects until recent times immediately follow (e.g. in AIS atlas one finds "Lombard *lünezdi*" [lynez'di] < *lunis dies*" vs. Italian *lunedi*, 1967: 31 [underline added here and in the following examples]). Therefore, von Wartburg includes the Cisalpine regions Piedmont, Lombardy, Veneto, Liguria and Emilia "...for the Late Latin period... in the domain of the retention¹⁶ of /-s/¹⁷" (1967: 33; see also Rohlfs, 1966), along with Transalpine Gaul and Rhaetia, in opposition to Peninsular Italy and the rest of Eastern Romania.

b. Another phonetic change distinguishes Western Romania from Eastern Romania, as expressed by von Wartburg: the voicing of intervocalic voiceless Latin plosives. Von Wartburg includes "the Alpine regions, Northern Italy up to the La Spezia-Rimini line..."¹⁸ in the area where this phenomenon shows up (e.g. "Italian *sapere*, *mutare*, *sicuro*" vs. "Occitan and Spanish *saber*, *mudar*, *segur(o)*" and present-day Lombard [sa'vɛ], [my'da] and [se'gyr] 'to know, to change, sure', 1967: 34).

c. The diphthongization of [ε] and [\mathfrak{d}] before palatal sounds is said to show up exclusively in almost the entire Western Romania *and* in Northern Italy. "For what concerns the diphthongization of [ε] and [\mathfrak{d}] in front of the palatal..., which is closely related to the change [-kt-] > [-jt-], it seems to be very old and covers almost the entire Western Romania. ... In the Gallo-Romance domain, this diphthong is almost general, although later, by secondary processes, the results became divergent again" (1967: 68-69).¹⁹ According to von Wartburg, in Northern Italy, the diphthongized forms of ancient [ε] and [\mathfrak{d}] before palatal are directly observable in the ancient texts, in modern Ligurian (e.g. "[ljetu]" < ['ljeitu] vs. Italian *letto* < LECTU 'bed'), in Alpine Lombard (e.g. "[pjet[]" vs. Italian *petto* < PECTU 'chest') and Ferrarese geolects, and in the modern geolects of the Gallo-"Italic" colonies in Sicily (e.g. "[r \mathfrak{a} 'kw \mathfrak{a}]ta]" vs. Italian *ricotta* 'buttermilk curd'). In other parts of

¹⁶ Please remember that in von Wartburg's view it is about the "retention/conservation" of a "restored" classical Latin trait, absent in Eastern Romance.

¹⁷ "...pour l'époque du latin tardif... dans le domaine de la conservation de l'/-s/".

¹⁸ "Les régions alpines, l'Italie septentrionale jusqu'à la ligne La Spezzia-Rimini..."

¹⁹ "Quant à la diphtongaison de $\varphi[\varepsilon]$ et $\varphi[\sigma]$ devant palatale (lectu, nocte, mediu, podiu, etc.), qui se trouve étroitement liée au changement -ct- > -it-, elle semble être très ancienne et couvrir presque toute la Romania occidentale. ... Dans la Galloromania, cette diphtongaison est presque générale, bien que, par la suite, par des processus secondaires, les résultats soient de nouveau divergents."

Northern Italy, the diphthongs show up in more recent "monophthongized" forms (1967: 69). "Thus, from Leon to Friuli [therefore across Northern Italy], there emerges a vast domain in which [ε] and [\mathfrak{o}] undergo a first modification when they are followed by a palatal consonant... We situate this change approximately at the beginning of the fifth century" (1967: 68-70).²⁰

In conclusion, von Wartburg *describes* the geolects of Northern Italy as sharing all the isoglosses that oppose Western Romance to Eastern Romance:

1. "The demarcation line La Spezia-Rimini... is a frontier dividing two wide linguistic groups that oppose one another: the Western Romania and the Eastern Romania. When the Latin unity begins to break up, it is along this line that the most important of all the differentiations took shape" (von Wartburg, 1967: 56).²¹

2. "...the most important separation line within Romania cuts across the [Italian] Peninsula, from La Spezia to Rimini" (von Wartburg, 1967: 107).²²

3.2.3. Statements about the presence of Celtic substrate $effects^{23}$ in the Gallo-"Italic" geolects

Von Wartburg hypothesizes the changes $-CT - [-\chi t-]$ and $\overline{U} > [y]$ to be effects of the "Celtic substrate" (1967: 36-37). Below, I will mention some von Wartburg statements about the presence of these traits in the Gallo-"Italic" geolects:

d. von Wartburg states that Northern Italy, at least up to Adige river, and Rhaeto-Romance form part of the "-CT- > - χ t-" domain. Lombard no[t], Piedmontese nœ[jt], Genovese no[it]e (vs. Italian

 $^{^{20}}$ "Ainsi se dessine, du Léon au Frioul, un vaste domaine dans lequel ę [ϵ] et q [ς] subissent une première modification lorsqu'ils sont suivis d'une consonne palatale.... [N]ous situons ce changement approximativement au début du V^e siècle."

²¹ "Ainsi, la ligne de démarcation La Spezzia-Rimini... est une frontière séparant deux grands ensembles linguistiques qui s'oppose l'un à l'autre : la Romania occidentale et la Romania orientale. Au moment où l'unité latine commença à se désagréger, c'est le long de cette ligne que se forma la plus importante de toutes les différenciations."

²² "...la ligne de séparation la plus importante à l'intérieur de la Romania coupe la Péninsule en travers, de La Spezzia à Rimini." Similarly: "The most important dividing line [of Romania] is undoubtedly the one that crosses the Apennine Peninsula diagonally from La Spezia to the Adriatic see / La ligne de séparation la plus importante est incontestablement celle qui traverse en diagonale la Péninsule des Apennines de La Spezzia à l'Adriatique." (von Wartburg, 1967: 55).

²³ Throughout the present chapter (and the entire thesis), 'Celtic substrate effects' means 'what von Wartburg proposes/hypothesises to be such'. One should keep in mind that it is not among the aims of the present thesis to discuss or question the descriptions and the etiological hypotheses of historical-linguistic phenomena that von Wartburg presents. The same applies to the authors that I analysed in Chapter 2.

notte [not:e] < NOCTE 'night'), and Sursilvan la[tʃ^J] 'milk' "...are products of - χ t- according to the local phonetics" (1967: 37).²⁴ In Emilia and Romagna [t] is prevalent but the AIS²⁵ data show the retention of the palatalized form—in words like "te[tʃ], te[jtʃ]" 'roof' and "no[tʃ]" 'night'—for some lateral localities of these areas (1967: 37, note 39). In Northern Italy, only east of the Adige river "it is no longer possible to detect evident traces of an ancient - χ t-" (1967: 37).²⁶ "Italy, south of the La Spezia-Rimini line..., Romania [Rumanian]..., Dalmatian... [and] Sardinia" show no evidence of this linguistic change (1967: 36).

e. The change $\overline{U} > [y]$ (e.g. French [myʁ] $< M\overline{U}RU$ 'wall') did not take place—in von Wartburg's words—in the whole territory of Celtic settling. However, this change "is undeniable where the Celts were established in large numbers" (1967: 47).²⁷ Piedmont, Lombardy, Liguria, and Emilia up to Panaro valley currently show the form $[y] < \overline{U}$ (e.g. Lombard [myr] vs. Italian ['muro] $< M\overline{U}RU$ 'wall'). Based on some current forms observed in the $[u] < \overline{U}$ areas of the Ticino basin in Switzerland—among which von Wartburg cites the Misox/Mesolcina valley—it is "evident" that, in those areas, the current $[u] < \overline{U}$ was formerly a [y] (1967: 44). Regarding south Emilia and Romagna, where [u] for \overline{U} was prevalent in his time, von Wartburg remarks that AIS atlas shows some forms which are likely to preserve some "intermediate" stages of the change $\overline{U} > [y]$ (1967: 46). The very fact that the whole Po valley (including Emilia) and Romagna, which are notoriously territories of Celtic tribes settling, show retention of [y] or traces of its historical existence (Mesolcina valley and Emilia-Romagna plain) is considered by von Wartburg as an evidence supporting the Celtic origin of the change $\overline{U} > [y]$, against the doubts of Meyer-Lubke. Therefore, von Wartburg concludes:

1. "...Emilia is not out of the [y] domain; *therefore* we would not be able to use its example in order to contest the Celtic theory [according to which $[y] < \overline{U}$ is an effect of Celtic substrate]" (von Wartburg, 1967: 46, [emphasis added]).²⁸

²⁴ "... sont des produits de -xt- conformes à la phonétique locale..."

²⁵ AIS, *Sprach- und Sachatlas Italiens und der Südschweiz*, Linguistic and Ethnographic Atlas of Italy and Southern Switzerland

²⁶ "A l'Est de l'Adige... il n'est plus possible de de déceler des traces sûres d'un ancien χt ."

²⁷ "Mais elle est indéniable là où les Gaulois étaient établis en très grand nombre."

²⁸ "...l'Emilie ne se situe pas en dehors du domaine de \ddot{u} ; on ne saurait donc mettre son exemple en avant pour combattre la théorie celtique."

In conclusion, it is clear that in his study von Wartburg (1.) assumes the Celtic linguistic substrate of Gallo-"Italic"; (2.) *describes* the Gallo-"Italic" geolects as sharing all the changes that, in his view, are effects of the Celtic substrate; or (3.) in any case are exclusively shared by the uncontested Gallo-Romance varieties (French, Occitan, Franco-Provençal):

2. "Northern Italy marched by the side of Rhaetia and Gaul. In the Po plain and in the Alpine regions that are attached to it to the North, the phonetic changes due to the Celtic substrate create new differentiations..." (von Wartburg, 1967: 107).²⁹

3.2.4. Statements in which the Gallo-"Italic" geolects are referred to as not being Gallo-Romance

However, in the same pages where he *describes* the Gallo-"Italic" geolects as sharing all the Western Romance linguistic traits, and in particular those that he interprets as the effects of the Celtic substrate, von Wartburg also *refers to them* as if they were *not* Gallo-Romance. Here are two examples:

g. In Section 2 of Chapter IV, which is devoted to the effects of the Germanic superstrate that would concur to the internal splitting of Gallo-Romania, von Wartburg only refers to the borders between French, Provençal and Franco-Provençal. No section heading explicitly refers to the Gallo-"Italic" geolects as making part of Gallo-Romance.

h. Referring to the change $\overline{U} > [y]$, von Wartburg states: "(Once) *started from Gallo-Romance*, the change would have *then reached* Northern Italy..." (1967: 42 [emphasis added])³⁰. In this passage, it is understood that when the change $\overline{U} > [y]$ had already spread through the uncontested Gallo-Romance domain, "Northern Italy" was not part of the Gallo-Romance domain³¹. However, some gaps can be noticed in von Wartburg's reasoning on the basis of the following premises:

 ²⁹ "L'Italie du Nord marchait de pair avec la Rhétie et la Gaule. Dans la plaine du Pô et dans les régions aplestres qui s'y rattache au Nord, les changements phonétiques dus au substrat celtique créent de nouvelles différenciations..."
 ³⁰ "Parti du galloroman, le changement aurait ensuite gagné l'Italie du Nord..."

³¹ It cannot be excluded that, in this passage, Wartburg indirectly refers to the terminology used in Haudricourt and Juilland (1949), which he is citing and criticising. However, what was observed in point g suggests that the exclusion of "Northern Italy" from Gallo-Romance, expressed/assumed in this passage, reflects Wartburg's opinion too.
- he assumes that the change U > [y] in Gallo-Romania is a "slow and gradual" and longlasting process, affecting the various areas of Gallo-Romania at different degrees, conditions, and times (1967: 38, 42, 48):

1. "Requiring a perfect concordance between the area of [y] and that of the Gallic settling would equate to supposing that the evolutionary tendency in question has everywhere appeared with an equal intensity throughout the Gallic territory, and everywhere simultaneously, which is highly implausible" (von Wartburg, 1967: 48);³²

- from von Wartburg we learn that in some of the uncontested Gallo-Romance areas (the "highest part of the Romance Valais and Eastern Walloon", see map 10, reported in Figure 3.2), the change Ū > [y] did not take place (1967: 44, 48);
- let's assume, as a working hypothesis, that "then" in bullet point h above means 'after the change U
 [y] has affected all the *uncontested* Gallo-Romance geolects (excluding the geolects of Valais and Walloon mentioned above)'.

From these premises, it remains unclear as to why the uncontested Gallo-Romance areas where the change occurred later ("then") with respect to the rest of the uncontested Gallo-Romance domain were already classified as Gallo-Romance at the moment when the change spread, differently from the Gallo-"Italic" area. This in turn makes it unclear as to whether, in von Wartburg's opinion, the change $\overline{U} > [y]$ is one of the defining traits of Gallo-Romance or not. If yes, it should be explained when it is 'too late' for the change $\overline{U} > [y]$ to be relevant in ascribing a geolect to Gallo-Romance and why (bringing to the fore the problem of the classification of Romance Valais and Eastern Walloon, which never underwent the change $\overline{U} > [y]$). However, von Wartburg does not indicate what possible—if any—further *primitive Gallo-Romance-defining* changes would discriminate between the uncontested Gallo-Romance geolects (Transalpine Gaul) and the ones spoken in Northern Italy (Cisalpine Gaul), possibly showing up in the former and not in the latter, so that the

³² "[E]xiger une parfaite concordance entre l'aire de ü [y] et celle du peuplement gaulois reviendrait à supposer que la tendance évolutive en question s'est partout manifestée avec une égale intensité sur tout le territoire gaulois, et partout de façon simultanée, ce qui est hautement invraisemblable."

reader cannot work out why the author does not refer to the Gallo-"Italic" area as being part of the primitive area of Gallo-Romance. On the contrary, the reader learns that the Gallo-"Italic" geolects share all the isoglosses that define the Gallo-Romance group, namely the Western Romance ones (see Section 3.2.2), plus the palatalization of -CT-, plus the change $\overline{U} > [y]$ (see Section 3.2.3). This inconsistency would be explained if the author explicitly stated that he assumes those politically French areas (uncontested Gallo-Romance) to be Gallo-Romance a priori, and Gallo-"Italic" to be non-Gallo-Romance a priori. This would correspond to recognising that, by the label 'Gallo-Romance', he refers to a group which is not identified on the basis of the isoglosses in question or of isoglosses in general (this stance would ascribe von Wartburg to the 'mixed criterion tradition' analysed in Chapter 2). However, we have seen that von Wartburg never makes explicit recourse to *Ausbau*-based arguments, and neither does he specify what non-*Abstand* criterion could possibly decide such labelling, so it is unclear what the label 'Gallo-Romance' (and the rest of the nomenclature) is informative of.

3.2.5. STATEMENTS IN WHICH THE GALLO-"ITALIC" GEOLECTS ARE REFERRED TO AS NOT BEING WESTERN ROMANCE

Moreover, in some passages, von Wartburg even refers to the Gallo-"Italic" geolects as if they were not part of Western Romance. Below, I will relay some of the several possible examples.

i. Introducing the examples (1967: 30-33) that he considers evidence of the fact that "in a substantial part of Northern Italy the deletion of -*s* is a relatively late phenomenon", ³³ von Wartburg states: "So far we have roughly compared the Romance languages of the East and West. However, *this is not enough* to clarify the boundary between the areas of loss and retention of -s within the Romance linguistic domain during the Latin era" (1967: 30 [emphasis added]).³⁴

j. Von Wartburg has just exemplified how what he considers as an effect of Germanic superstrate (lengthening of vowels in stressed free syllable) shows up in French, in the *geolects of Northern Italy*, and in Tuscan. In relation to this, at one point, von Wartburg states: "North of the frontier

³³ "...dans une partie importante de l'Italie septentrionale, l'amuïssement de l'-s est un phénomène relativement tardif" (1967: 30).

³⁴ "Nous avons jusqu'à présent confronté grosso modo les langues romanes de l'Est et de l'Ouest. Ce n'est cependant pas suffisant pour préciser la frontière entre les aires d'amuïssement et de conservation de l'-s à l'intérieur du domaine linguistique roman à l'époque latine."

[between French and Provençal domains]... the stressed vowels have undergone a strong differentiation that has remained *ignored by the other countries of the Western Romania*." (1967: 74 [emphasis added]).³⁵

k. Similarly: "In Western Romania, the lengthening of the vowels in free syllable had important consequences only in northern Gallo-Romance" (1967: 72).³⁶

l. In Chapter IV, devoted to the Germanic superstrate effects, Section 3 is headed *The fragmentation of Italy.*³⁷ Similarly to what we have observed about Pellegrini (see Section 2.1.1.2.3), this heading necessarily alludes to an original linguistic unity of Italy, including Northern Italy. An original linguistic unity of Italy would implicitly exclude either the Western Romance nature of Northern Italy or the Eastern Romance nature of Peninsular Italy, given that the contrast *Western vs. Eastern Romania* is defined, in von Wartburg's study, on the basis of *substrate* effects and "primitive changes". This discrepancy can also be observed in the following statements (*m* and *n*).

m. Summarizing the effects of pre-Latin substrates von Wartburg states: "...a ditch *began* to be dug between Northern Italy and Central Italy, *while* more or less the same Latin was spoken west and east of the western Alps" (1967: 57, [emphasis added])³⁸. One should here note the incongruity between *began* and *while* in this passage, since we can assume on the basis of the cooperative principle (Grice, 1975) that von Wartburg deems that in the same period 'the same Latin was *not* spoken in Northern and Central Italy (i.e. north and south of the Massa-Senigallia line)', meaning that the ditch *already existed*.

n. Referring to the Longobard (Germanic) people, and in particular to the fact that their Germanic language acts as superstrate for both the geolects of Northern Italy and Tuscan, von Wartburg states: "Thus, they firmly *held* united what tended to dissociate" (1967: 130 [emphasis added]).³⁹ However, we have seen that in some other statements von Wartburg explicitly excludes an original linguistic unity of Italy, namely he excludes that "Italy" could correspond to a taxonomic unit in a genealogical classification:

³⁵ "Au Nord de la frontière ainsi définie, les voyelles accentuées ont subi une différentiation profonde, qui est restée ignorée des autres pays de la Romania occidentale."

³⁶ "Dans la Romania occidentale, l'allongement des voyelles en syllabe libre n'a eu des conséquences importantes qu'en galloroman septentrionale."

³⁷ "La fragmentation de l'Italie".

³⁸ "...un fossé a commencé a se creuser entre l'Italie du Nord et l'Italie Centrale, tandis qu'on parlait à peu près un même latin à l'Ouest et à l'Est des Alpes occidentales."

³⁹ "Ils ont ainsi fermement maintenu l'unité de ce qui tendait à se dissocier."

1. "*Until the end of the Empire*, the phonetic evolution has followed, north and south of the La Spezia-Rimini line, different routes; only the changes which had reached almost the whole Romania were shared by the two domains. ...*[N]o particular phonetic change affected, exclusively and as a whole*, the whole area that we consider today as the Italian linguistic domain." (von Wartburg, 1967: 108 [emphasis added]).⁴⁰

What I want to stress here is that, from a genealogical perspective, the presumed original linguistic unity of Italy is automatically excluded every time von Wartburg *describes* the Gallo-"Italic" geolects as sharing inherited Western Romance and Gallo-Romance traits.

3.2.6. SHARING GERMANIC SUPERSTRATE WITH TUSCAN

Some passages in von Wartburg (1967) offer a possible interpretation for the abovementioned discrepancy (between *describing* Gallo-"Italic" as Western Romance/Gallo-Romance and *referring to it* as not Western Romance/Gallo-Romance). In these passages, the author seems to presume that the fact that both "Northern Italian" and Tuscan geolects share one effect (or some effects, see bullet point *o*. below and included footnote 41) of Longobardic (Germanic) superstrate would therefore *entail* the separation of Northern Italy from the rest of Gallo-Romania and would attach it to Peninsular Italy, separating it implicitly from the rest of Western Romania (see von Wartburg 1967, map 10, reported in Figure 3.2). I will quote some of these passages below.

o. Von Wartburg has just excluded any original linguistic unity of Italy (see Section 3.2.5 above, quotation 1) but then he states: "The situation changes *in the early* Middle Ages. New waves of phonetic changes⁴¹ arrive over the transverse barrier mentioned above [La Spezia-Rimini line]. A new era begins for the Italian linguistic domain" (1967: 108 [emphasis added]).⁴² However, in this

⁴⁰ "[J]usqu'à la fin de l'Empire, l'évolution phonétique a suivi, au Nord et au Sud de la ligne La Spezzia-Rimini, des voies différentes; seules étaient communes aux deux domaines les modifications qui avaient atteint presque toute la Romania. Pour autant que nous puissions nous en rendre compte, aucun changement phonétique particulier n'affecta uniquement, dans son ensemble, tout le territoire que nous considérons aujourd'hui comme le domaine linguistique italien."

⁴¹ Despite the plural form, von Wartburg only mentions and analyzes "the modification of stressed vowels in open syllable" (1967: 108). This "modification" is the further lengthening of long stressed Romance vowels, whose effect is in turn the retention of the opposition between vowels of stressed open and stressed closed Latin syllables.

⁴² "La situation se modifie au début du moyen âge. Des vagues de changements phonétique affluent par-dessus la barrière transversale définie plus haut. Une nouvelle époque commence pour le domaine linguistique italien."

passage the author does not specify the direction of these "new waves", whether from Tuscany towards Northern Italy or the other way around.

p. Longobards and the superstrate effect(s) of their Germanic language upon the varieties of both Northern Italy and Tuscany "...firmly *held united* what tended to dissociate. They have given the same impulsion upon an *essential point* of their phonetic development to both the territories situated to the north and to the south of this line" (1967: 130 [emphasis added]).⁴³

q. "... as Longobards have avoided the constitution of a real linguistic frontier between Florence [in Tuscany] and Bologna [in the Gallo-"Italic" Cisalpine], the forming linguistic domain had to set its limits elsewhere. These limits were set along the Alps, but in such a way that almost all the upper valleys of the rivers that go down the Western Alps towards the Po valley have maintained their Gallo-Romance nature. ... What happened on the western edge of the Po plain also happened on its northern edge" (1967: 130-131 [emphasis added]).⁴⁴ It should be noted that the statement "have maintained their Gallo-Romance nature" presupposes two things: (1.) that von Wartburg considers the Gallo-Romance—and not only the Western Romance—identity of Northern Italy as already established before the arrival of Longobards; (2.) that the geolects of Northern Italy have *lost* their original Gallo-Romance traits *due to* the sharing of Longobardic superstrate with Tuscan. However, in a cladistic perspective, it is not clear how the fact that both Gallo-"Italic" and Tuscan show one effect (or even several possible effects, see footnote 41) of Longobardic superstrate could entail that Gallo-"Italic" abandons its inherited Western Romance traits and effects of the Celtic substrate and *becomes closer to* Italo-Romance. Rather, it seems logical to conclude that Tuscan and Gallo-"Italic" became linguistically closer to one another (and to French) with respect to a single (or possibly some) linguistic innovation (see analogous arguments in Hull, 1982). More particularly, in a case where we interpret the sharing of this trait as a loan from Northern Italy towards Tuscany, as Rohlfs does among many⁴⁵ (Rohlfs, 1966; see also Hull, 1982), we should

⁴³ "Ils ont ainsi fermement maintenu l'unité de ce qui tendait à se dissocier. Aux deux territoires situés respectivement au Nord et au Sud de cette ligne, ils ont donné une même impulsion sur un point essentiel de leur développement phonétique." See footnote 40 above.

⁴⁴ "…lorsque les Lombards ont empêché la constitution d'une véritable frontière linguistique entre Florence et Bologne, le domaine linguistique en formation a dû fixer sa limite ailleurs. Cette fixation s'est effectuée le long des Alpes, mais d'une façon telle que les hautes vallées des cours d'eau qui descendent des Alpes occidentales dans la plaine du Pô ont presque toutes gardé leur caractère galloroman… Ce qui s'est produit sur la lisière occidentale de la plaine du Pô s'est également produit sur sa lisière septentrionale."

⁴⁵ Scholars agree that many loans from the Cisalpine entered Tuscan geolects at least since the period when the Lombard (Cisalpine) town Pavia was the capital of *Langobardia Maior* (the Longobard Kingdom including most of

conclude that it is Tuscan that becomes closer to some Gallo-Romance varieties, namely to French and Gallo-"Italic".⁴⁶ In neither case does it seem logical to conclude that the sharing of this innovation by both Gallo-"Italic" and Tuscan could entail the loss of inherited Western Romance and Gallo-Romance traits by Gallo-"Italic".⁴⁷

Moreover, neither is it clear why this effect of superstrate should be more "essential" than other "point[s] of [the] phonetic development" (see paragraph *p*. above) of Gallo-"Italic" and Tuscan, to the point of being more decisive in ascribing Gallo-"Italic" to Italian/Italo-Romance than all the other Western and Gallo-Romance traits are in ascribing Gallo-"Italic" to the Western and Gallo-Romance traits are in ascribing Gallo-"Italic" to the Western and Gallo-Romance traits are in ascribing Gallo-"Italic" to the Western and Gallo-Romance group, especially if we consider that this trait is shared by the geolects of Northern Italy and Tuscan, but not by the Median and Southern Italo-Romance geolects.

Based on these considerations, I conclude that von Wartburg's study does not provide arguments which are able to exclude Gallo-"Italic" from the area of development of Gallo-Romance (before and) during the Longobard and Frankish periods ("c. 476-843", Hull 1982: 7).

3.2.7. HETERONOMY WITH RESPECT TO THE TUSCAN/ITALIAN LITERARY LANGUAGE

r. In addition to the statements about the Longobardic superstrate effects, whose ineffectiveness in supporting an *Abstand*-grounded pro-Italo- stance I have just discussed, von Wartburg (1967) makes another statement that he seems to present as a further *Abstand*-based pro-Italo- 'argument'. This is a statement about the linguistic convergence of the geolects of Northern Italy towards Tuscan, due to the late medieval diffusion of Tuscan as literary language (heteronomy, Trudgill, 1992, see Section 1.4.1 footnote 16). Von Wartburg states:

1. "...from the 13th century, when the linguistic supremacy of Tuscan became unopposed, the *waves of linguistic changes progress from South to North*. They have taken away some pieces of that old frontier [La Spezia-Rimini line] and *have carried them towards some more northern areas*. So, the whole of Northern Italy lost the -s; the line between the retention and the loss of this consonant passes today north

the Cisalpine and Tuscany) and of the following Frankish Kingdom of Italy.

⁴⁶ Indeed, I understand that no scholars stated that the fact that the Welsh language *borrowed from* English during several centuries made the *English language in turn become more similar to Celtic*.

⁴⁷ For the same reasons, we can exclude that it could entail the loss of inherited Eastern Romance and Italo-Romance traits by Tuscan varieties.

of the plain, and between the old and the new isoglosses only a few traces of the old situation are still preserved." (Wartburg, 1967: 130 [emphasis added]).⁴⁸

In order to be considered relevant for the classification of Gallo-"Italic", this supposed linguistic convergence of Gallo-"Italic" towards Tuscan/Italian can be interpreted according to two distinct *Abstand* classificatory criteria, namely the *genealogical* criterion and the *synchronological* criterion. According to this latter criterion, geographically contiguous geolects are grouped on the basis of their mere synchronic *Abstand* similarity, regardless of the fact that their similarity is owed to inheritance from a common ancestor,⁴⁹ or to contact successive to their splitting,⁵⁰ or to possible unrelated but convergent changes. In both these two perspectives (i.e. genealogical and synchronological), some criticisms against von Wartburg's pro-Italo- stance can be made.

I. In a *genealogical* perspective, it is only consequent to a full-fledged language replacement that the geolect spoken in a given region could get consistently ascribed—for two different historical periods—to two different *overordered* taxonomic units (branches) of the family tree.⁵¹ In our case, some *Italo*-Romance geolects should have *replaced* the ancient Cisalpine *Gallo*-Romance geolects. After all, this is why scholars ascribe the Po valley to the Celtic linguistic domain and to the Romance linguistic domain for the periods respectively precedent and following the beginning of the Roman domination and the consequent spreading of Latin and the shift of Cisalpine Celtic varieties. Such language replacement is understood whenever scholars refer to the Celtic substrate effects (possibly) showing up in Gallo-"Italic" (and Western Romance in general) geolects (Ascoli 1882-1885; Rohlfs 1937; Pulgram 1958; von Wartburg 1936, 1967; Hall Jr. 1974; Pellegrini 1975; Varvaro 2001). Indeed, in a genealogical perspective, it is not logically possible to state 'Gallo-"Italic" was Gallo-Romance but then *became* Italo-Romance'—as if a linguistic system (Gallo-

⁴⁸ "...depuis le XIIIe siècle, époque où la primauté linguistique de la Toscane est devenue incontestée, les vagues de changements linguistiques progressent du Sud au Nord. Elles ont emporté des morceaux de cette vieille frontière et les ont charriés vers des contrées plus septentrionales. Ainsi toute la haute Italie a perdu l'-s; la limite entre le maintien et la chute de cette consonne passe aujourd'hui au Nord de la plaine, et entre l'ancienne isoglosse et la nouvelle, seule quelques traces de l'ancien état se sont encore conservées."

⁴⁹ Namely, due to genealogical relationship, which is traditionally represented by the *family tree* model, see Schleicher 1861-1862.

⁵⁰ Traditionally represented by the *wave* model, see Schuchardt 1868; Schmidt 1872; see also Alvar 1967; see also Campbell 1998.

⁵¹ Overordered taxonomic units are taxonomic units that are defined on a higher categorial level, like *Italo-Romance* with respect to Tuscan, Sicilian, Napolitan, etc.; or like *Romance* with respect to Gallo-Romance, Italo-Romance, etc. (see "lower and superior categories" Simpson 1945: 15 footnote 1; and "gruppo superordinato, raggruppamenti di ordine superiore, unità tassonomiche superiori" in Alinei 1996: 83, 93).

"Italic") had changed position in the overordered branches of the family tree at one point of its linguistic development—since this would imply an impossible jump back into time (see also Section 2.2.1.1). On the contrary, it would be logically possible to state 'a language shift happened, as a consequence of which some Italo-Romance geolects *replaced* the ancestral Gallo-Romance geolects, relegating the ancient Gallo-Romance inherited traits to some substrate effects and to a minor amount of lexical relics in the new geolects'. In this respect, assuming as a working hypothesis that von Wartburg understood that a language replacement occurred, what could be contested is that it would be proper for him to provide evidence of it from Gallo-"Italic" dialect studies of his times and from philology—while he did not. In any case, the 'replacement' scenario, which I took into consideration just because it is the only scenario that would be consistent with the genealogical pro-Italo- stance, is actually not the one that von Wartburg claims;⁵²

2. Indeed, we have seen that the scenario that von Wartburg claims is rather that the ancient Cisalpine Gallo-Romance, despite not being actually replaced by Italo-Romance, borrowed from Tuscan so many linguistic (*Abstand*) traits (see example 1 above: "waves of linguistic changes progress from South to North") that the Italo-Romance traits overtook the Gallo-Romance ones in the modern-day Gallo-"Italic" geolects. In this *synchronological* perspective, the following three criticisms against the pro-Italo- stance can be made:

i. Firstly, the degrees of linguistic similarity between geolects, indistinctly due to common ancestry and to contact after the splitting, would be more properly expressed by means of a *synchronological classification/nomenclature*, explicitly distinct and independent from the *genealogical classification/nomenclature*. Such a synchronological nomenclature would correctly inform the reader about the still recognizable genealogical Gallo-Romance nature of modern-day Gallo-"Italic", notwithstanding the new (possible) predominance of borrowed Italo-Romance traits. The reasons why two classifications—genealogical and synchronological—should be proposed and kept distinct by means of two different nomenclature' problem), where I argued that *Abstand*-based and *Ausbau*-based classifications should be kept distinct and should make recourse to two different

⁵² More generally, and as far as I am aware, no scholarly studies claim nor report evidence that a language replacement occurred.

nomenclatures. A polysemic (or *inertial*) use of one nomenclature is indeed questionable because two distinct classificatory criteria applied to the same group of items can result in two different distributions of the items among the sub-groups. In this case, the nomenclature that matches one of the two sub-groupings cannot match and be informative for the other one. The consequence is a loss of informativeness of the nomenclature in both the "classifications";

ii. Secondly, it would be proper to provide some evidence, from Gallo-"Italic" dialect studies (of von Wartburg's time) and from philology, that such supposedly critical linguistic convergence did really take place. This equates to saying that some evidence would have to be provided that the "waves of linguistic changes progress[ing] from South to North"as mentioned by von Wartburg (Section 3.2.7, example 1)—entailed the loss of inherited Western Romance and Gallo-Romance traits in the ancient Gallo-"Italic" geolects and their progressive replacement by Italo-Romance traits. Indeed, we have seen that, among what he considers the Western and Gallo-Romance definitory traits, von Wartburg only mentions the loss of /-s/ as a consequence of contact with Tuscan/Italian. Even taking the most disadvantageous perspective for the pro-Gallo- stance, and assuming-as von Wartburg does—that "retention of [Latin] final -s" is one of the "essential traits" of Gallo-Romance (von Wartburg 1967: 65-66; but Campbell 1998: 197 states that "shared retentions are of practically no value for sub-grouping"), it seems in any case arguable that this only (possible) 'anti-Gallo-Romance' trait (i.e. the loss of /-s/) could be considered as *counting* more than all the Western Romance and Gallo-Romance traits that dialectologists still recognise in all registers of all the modern-day Gallo-"Italic" geolects, even in the most urban geolects (Merlo 1959, Maiden & Parry 1997, Loporcaro 2009). Therefore, von Wartburg seems to take such critical linguistic convergence for granted (see also Loporcaro 2009). Von Wartburg does not tell us as to what other Western and Gallo-Romance traits, in addition to /-s/, the geolects of Northern Italy would have lost as a (possible) consequence of their heteronomy (Trudgill, 1992) with respect to Tuscan. Besides the loss of /-s/, he only mentions the "palatalization of l" in muta cum liquida clusters (PL, BL, etc.) as "...one of the first innovations that are shared by the totality of the Italian varieties..." (Wartburg 1967: 131). However, even if one were to accept von Wartburg's stance of an "Italian" origin for this change (but see Hull 1982/2017 for another hypothesis),⁵³ it should be specified that *muta cum liquida* clusters are a conservative Proto-Romance trait (Hall Jr. 1976) and their retention cannot therefore count as a Gallo-Romance defining trait, as "shared retentions are of practically no value for sub-grouping" (Campbell 1998: 197). As a consequence, its late medieval palatalization cannot count as a loss of a Gallo-Romance trait, rather it should count as an isogloss shared by Italo-Romance and a Gallo-Romance sub-group, namely Cisalpine (or, more precisely, by Italo-Romance, *various* Transalpine and Cisalpine uncontested Gallo-Romance geolects, and most of the contested Gallo-Romance Cisalpine geolects, see Hull 1982/2017);

iii. Thirdly, the statement 'Gallo-"Italic" became more similar to Italo-Romance than to Gallo-Romance' is a statement about *quantity* and needs as such to be supported by means of some quantitative method, which, as far as I know, von Wartburg actually did not use (see in Section 2.2.1 above as regards the 'lack of quantitative evidence' problem). Such a method would be able to determine *how much* the ancient Gallo-Romance geolects of Northern Italy became similar to the (bordering) Italo-Romance geolects and dissimilar from the (bordering) uncontested Gallo-Romance geolects, finally showing, if possible, that they are currently more similar to the bordering Peninsular geolects than to the bordering uncontested Gallo-Romance geolects, which is to say that the continuum that they currently form with the Peninsular geolects is smoother than the one that they form with the uncontested Gallo-Romance geolects.

In fact, I draw attention to the fact that in map 10, entitled *The present-day Romania*, von Wartburg includes the whole of Cisalpine in the linguistic taxon *Italian*. Here Cisalpine is represented in continuity with Central and Southern Italy and in discontinuity with the whole of Transalpine Gaul, which is in turn graphically represented as a homogeneous whole labelled "Galloroman/Gallo-Romance" and subdivided into Occitan, French, and Franco-Provençal. Instead, in the preceding map 9, titled *Romania at the beginning of the 3rd century*, Cisalpine was included in the Western

⁵³ "[T]he palatalization of *pl*, *bl*, *fl* began earlier in Piedmont and Emilian (mostly Cispadane territory) than in Lombardy and Venetia: it is therefore possible that these changes were promoted by linguistic currents from northern and eastern France (including the Arpitan-speaking Cisalpine zone) where one finds the palatalized variants $p(\tilde{e}, pj\tilde{e},$ 'plein', $b(\tilde{a}, b)\tilde{a}$ 'blanc', $f(\omega(r)/f)\omega(r)$ 'fleur''' (Hull 1982/2017: 366 vol. 1; see also Figure 8).

Romania, in continuity with Transalpine Gaul and in discontinuity with Peninsular Italy (in turn represented as part of Eastern Romania) (see Figures 3.1 and 3.2).

3.2.7.1. CRITICAL CONVERGENCE: A CLARIFICATION ABOUT VON WARTBURG (1967)

In order to answer the research questions of this thesis (see Section 1.8), I will consider as being sufficient to discuss and question (and finally test) what I have named 'the critical convergence scenario', i.e. whether Gallo-"Italic" undertook at least the minimal amount of convergence towards Tuscan/Italian that is sufficient for it to have become more similar to the Peninsular geolects than to the uncontested Gallo-Romance geolects (see Section 2.2.1 and the included footnote 74). Indeed, such a minimum amount of convergence would be sufficient to justify the pro-Italo- synchronological stance. However, for the sake of a more complete comprehension of von Wartburg's study, it is maybe worth making the following clarification. One should note that by stating that the convergence at issue took place in such a way that "almost all the upper valleys of the rivers that go down the Western Alps towards the Po valley have maintained their Gallo-Romance nature...... [and w]hat happened on the western edge of the Po plain also happened on its northern edge" (see Section 3.2.6 point q above), von Wartburg implicitly claims (see the cooperative principle, Grice 1975) that the rest-i.e. the vast majority-of the Po Valley and Romagna has not maintained its Gallo-Romance nature. This means that yon Wartburg seems to assume—even though he does not state it explicitly—that the convergence at issue was not only critical (i.e. the minimum amount that is necessary to justify a pro-Italo- grouping) but also decidedly bigger than the critical amount, i.e. such to entail the loss of at least most of the Gallo-Romance inherited traits, in some unidentified qualitative or quantitative sense. This collides with the fact that the examples of Gallo-"Italic" forms presented in von Wartburg 1967 regularly show what in that study are claimed to be the Western Romance and Gallo-Romance defining traits. This being the case, a reader could be prompted to conciliate these two facts by hypothesizing that von Wartburg assumes that the Western Romance and Gallo-Romance traits were lost in most of the present-day Gallo-"Italic" lexicon, and that they still show up in some lexical relics relegated to some registers of the language(s), among which there would be the examples that he himself shows in his work. However, in Section 3.3.3, we will see that this possible interpretation is irreconcilable with the dialectological studies which describe present-day Gallo-"Italic" geolects as showing pervasively in the lexicon—and across registers—the traits that von Wartburg presents as defining Western Romance and Gallo-Romance.

3.2.8. Summing up von Wartburg's (1967) stance about the classification of Gallo-"Italic"

Referring now to Gallo-"Italic" alone, which is the precise object of the current thesis—and no longer to the whole of Cisalpine—we have seen the following:

- All throughout his 1967 study, von Wartburg describes the Gallo-"Italic" geolects as sharing all the isoglosses that, in his view, define Western Romance and, in particular, Gallo-Romance. He also explicitly excludes any original and exclusive linguistic unity of Gallo-"Italic" with Peninsular geolects;
- On the other hand, all along his study, von Wartburg repeatedly refers to the Gallo-"Italic" geolects as if they were not Gallo-Romance, nor even Western Romance;
- 3. We have also seen that von Wartburg refers to some more recent (Early and Late Medieval) effects of contact as factors that would "keep these varieties [Gallo-"Italic and Tuscan] close to each other". These seem to be the only *Abstand*-based arguments upon which von Wartburg grounds his pro-Italo- stance. These arguments are: (1.) the sharing of one Longobardic (Germanic) superstrate effect by both Gallo-"Italic" and Tuscan in the Early Middle Ages; and (11.) the heteronomy of Gallo-"Italic" with respect to the Tuscan literary language, (supposedly) starting in the Late Middle Ages.

In the previous sections of the current chapter I have addressed the arguments in bullet point *3* (contact with Longobardic and heteronomy towards Tuscan), which merited some criticisms. These criticisms can be summarized as follows:

- a. The sharing of one (or possibly some) linguistic innovation by both Tuscan and Gallo-"Italic" does not entail that this latter abandoned the Western Romance and Gallo-Romance inherited traits;
- *b.* In a genealogical perspective, only a fully fledged language replacement could consistently justify that Northern Italy be ascribed earlier to the Gallo-Romance and later to the Italo-Romance linguistic domain. However, the 'language replacement scenario' is not the one that von Wartburg claims (and more generally, as far as I am

aware, no scholarly studies claim or report evidence that a language replacement occurred);

- c. If instead the scenario that von Wartburg meant is—as it actually appears to be (see Section 3.2.6. passage o, and Section 3.2.7 passage r, example 1)—that Gallo-"Italic" simply became linguistically more similar to Italo-Romance than to Gallo-Romance due to contact with Tuscan/Italian literary language (without implying a fully fledged language replacement), such degrees of similarity would be more properly expressed by means of a *synchronological classification/nomenclature* distinct and independent from the *genealogical classification/nomenclature*;
- d. And, assuming the scenario in *c*, this would require some evidence, taken from Gallo-"Italic" dialect studies and from philology, that a critical linguistic convergence really took place. Indeed, von Wartburg only provides the insufficient -S loss argument and seems to take such critical linguistic convergence for granted (similar considerations apply to other pro-Italo- scholars, e.g. Loporcaro 2009, see Section 2.2.1.2);
- *e.* And, assuming the scenario in *c*, the classification/labelling of Gallo-"Italic" as Italian/Italo-Romance would need to be supported by means of some quantitative method that allows one to measure *how much* the ancient Gallo-Romance geolects of Northern Italy became similar to the (bordering) Italo-Romance geolects and dissimilar from the (bordering) uncontested Gallo-Romance geolects, finally showing, if possible, that the continuum that they currently form with the Peninsular geolects is smoother than the one that they form with the uncontested Gallo-Romance geolects.

Up to this moment, I rejected von Wartburg's and other scholars' pro-Italo- stance by various epistemological—and ultimately logical—arguments, showing that the pro-Italo- proposals of classification show several *formal* inconsistencies. Among these, the following ones are sufficient to make the pro-Italo- stance untenable: (1.) most pro-Italo- scholars (the 'mixed criterion scholars) mix the *Ausbau* and the *Abstand* criteria into one unidimensional classification/nomenclature (the ontological problem), while (2.) von Wartburg (and some 'mixed criterion scholars') mix the genealogical and the synchronological criteria into one unidimensional "classification" (second form of the taxon problem) and (3.) do not provide evidence of the critical convergence scenario (lack of quantitative evidence problem).

However, in this study, I wanted to tackle the scholarly classificatory disagreement in a more resolutive way, searching in possible previous literature and providing myself the quantitative evidence missing in the pro-Italo- literature which can address the issues in points *d* and *e* above. In this view, the next sections of the present Chapter 3 present some scholarly studies useful to address the issues in object. In particular, Section 3.3.4 presents some scholarly quantitative studies that have already addressed some aspects of the issues in object. Then, Chapter 4 will present the experiment that I have conducted, aiming to provide the empirical evidence required in bullet point *e*. This experiment tests von Wartburg's claim (the 'critical convergence' scenario), which von Wartburg, nor other scholars, never tested. In order to test von Wartburg's claim, I will present it in the form of a hypothesis, which I will hereafter refer to as *the post-Wartburg hypothesis*. One should note that I termed it the post-Wartburg hypothesis rather than 'von Wartburg's hypothesis' since von Wartburg did not propose the critical convergence scenario as a testable (and tested) hypothesis, but rather formulated it as a claim not supported by quantitative evidence. Rather, it is I who wants to test von Wartburg's claim, hence I express it in the form of a hypothesis, which can be formulated as follows:

The post-Wartburg hypothesis

Starting from the Middle Ages, the genealogically Gallo-Romance geolects historically spoken in the Po valley and Romagna (Gallo-"Italic") underwent a critical linguistic convergence towards Italo-Romance. As a result of this, Gallo-"Italic" became linguistically more similar to the bordering Italo-Romance geolects (south of the Massa-Senigallia line) than to the bordering, uncontested Gallo-Romance geolects (among which is the Occitan spoken in the Alps). Therefore, the continuum that Gallo-"Italic" today forms with the bordering Italo-Romance geolects is smoother than the one that they form with the bordering uncontested Gallo-Romance geolects. This in turn equates to saying that the line dividing Gallo-"Italic" from Occitan on the Western Alps became a more substantial bundle of isoglosses than the Massa-Senigallia line.

The above formulation incorporates and summarises the following two statements by von Wartburg, already relayed above (see respectively Section 3.2.6 passage q and Section 3.2.7 example 1):

1. "... as Longobards have avoided the constitution of a real linguistic frontier between Florence [in Tuscany] and Bologna [in the Gallo-"Italic" Cisalpine], the forming linguistic domain had to set its limits elsewhere. These limits were set along the Alps, but in such a way that almost all the upper valleys of the rivers that go down the Western Alps towards the Po valley have maintained their Gallo-Romance nature. ... What happened on the western edge of the Po plain also happened on its northern edge.⁵⁴" (von Wartburg, 1967: 130).

2. "...from the 13th century, when the linguistic supremacy of Tuscan became unopposed, the waves of linguistic changes progress from South to North. They have taken away some pieces of that old frontier [La Spezia-Rimini] and have carried them towards some more northern areas. So, the whole of Northern Italy lost the -s; the line between the retention and the loss of this consonant passes today north of the plain, and, between the old and the new isoglosses, only a few traces of the old situation are still preserved." (Wartburg, 1967: 130).⁵⁵

3.3. WHY IS A *QUANTITATIVE* APPROACH NEEDED?

The next sections—3.3.1 to 3.3.3—explore in further detail the reasons as to why a quantitative approach is needed in order to test the post-Wartburg hypothesis (for a more general presentation of the advantages of using quantitative methods in dialectology and historical linguistics, see section 5.2, Part II, point 4). Then, Section 3.3.4. presents three scholarly quantitative studies that have already addressed some aspects of the issues in object.

3.3.1. 'CLASSICAL'⁵⁶ DIGLOSSIA IN ITALY

The literature shows that the effects of contact between varieties can be of a very diverse nature and intensity. Thus, even assuming the traditional (albeit probably oversimplifying, see Section 6.2.1.4) standpoint according to which Gallo-"Italic" has been heteronomous towards Tuscan since

⁵⁴ "Ce qui s'est produit sur la lisière occidentale de la plaine du Pô s'est également produit sur sa lisière septentrionale."
⁵⁵ "…depuis le XIIIe siècle, époque où la primauté linguistique de la Toscane est devenue incontestée, les vagues de changements linguistiques progressent du Sud au Nord. Elles ont emporté des morceaux de cette vieille frontière et les ont charriés vers des contrées plus septentrionales. Ainsi toute la haute Italie a perdu l'-s; la limite entre le maintien et la chute de cette consonne passe aujourd'hui au Nord de la plaine, et entre l'ancienne isoglosse et la nouvelle, seule quelques traces de l'ancien état se sont encore conservées."

⁵⁶ 'Classical' or 'narrow' diglossia is how some scholars (for instance Jaspers, 2016: 184) define the original Fergusonian concept of diglossia (Ferguson, 1959) in order to distinguish it from some more recent and distinct conceptual developments of it (see Hudson 1992, 2002).

the late Middle Ages,⁵⁷, we cannot take it for granted that such a heteronomous condition automatically entailed what I have named the critical structural convergence of Gallo-"Italic" towards Tuscan in the past, like von Wartburg and other pro-Italo- scholars (e.g. Lausberg 1965 and Loporcaro 2009, see Section 2.2.1) instead seem to do. In particular, the very concept of diglossia (Ferguson 1959; Hudson 1992, 2002) has been developed just to describe and explain the long-lasting maintenance of the structural identity of heteronomous varieties, namely of non-standard varieties living in the "field of force" (Muljačić, 1988) of a standard variety:

1. "Diglossia typically persists at least several centuries, and evidence in some cases seems to show that it can last well over a thousand years" (Ferguson, 1959: 240).

2. "We may mention [as an example of long-lasting diglossia] Latin and the emergent Romance languages during a period of some centuries in various parts of Europe" (Ferguson, 1959: 246).

3. "Tamil diglossia seems to go back many centuries, since the language of early literature contrasts sharply with the language of early inscriptions, which probably reflect the spoken language of the time" (Ferguson, 1959: 246).

Following Hudson (1992, 2002), as developed from Ferguson (1959), these are the conditions defining diglossia, distinguishing it from other types of sociolinguistic situations: (1.) two separate linguistic codes are used within a single society; (2.) the two codes have two separate functions: H(igh) variety, for 'high' and official culture, L(ow) variety for everyday pursuits; (3.) H is perceived as more prestigious than L; (4.) however, each variety is accepted by the whole community and considered as the most appropriate in its own function and context; (5.) H is usually highly standardized; (6.) H is not native to any part of the community, and thus it is the variety of a context, not the variety of a group. Importantly, Hudson (2002) points out that this latter condition (6) is relevant in distinguishing diglossia from societal bilingualism⁵⁸—where H is the native and everyday speech of a sociolinguistically definable group—in that it predicts the opposite outcomes in the case of a language shift.⁵⁹ In fact, in a diglossic situation, the shift favours (a standardized

⁵⁷ As I will explain in Section 6.2.1.4, this statement needs to be discussed in future work since, from the Middle Ages at least up to the 19th century, Gallo-"Italic" geolects developed a number of linguistic innovations which are divergent with respect to the Tuscan/Italian linguistic structure, norm, and development.

⁵⁸ See Tamburelli (2010: 183) below for the narrower concept of "asymmetric" societal bilingualism.

⁵⁹ In Hudson (2002), diglossia is opposed to "standard with dialects" situation too, which is not a relevant concept for the aims of the current chapter.

form of) L, whilst on the other hand, in a societal bilingual situation, the shift favours H, so that L tends to disappear. Diglossia is not an uncommon situation:

4. "It can probably be shown that this combination of circumstances [that according to the author would distinguish diglossia from other sociolinguistic situations] has occurred hundreds of times in the past and has generally resulted in diglossia. Dozens of examples exist today, and it is likely that examples will occur in the future." (Ferguson, 1959: 247).

These considerations indicate that, at the least, the theoretical scruple of not taking for granted the 'critical convergence' scenario is necessary, and that, therefore, *how much* the Gallo-"Italic" geolects were Tuscanized/Italianized has to be more precisely assessed. In fact, a possible age-old diglossia Gallo-"Italic" – Tuscan/Italian could have resulted in a massive maintenance of the original Gallo-Romance traits in modern-day Gallo-"Italic" geolects.

3.3.2. HETERONOMY OF GALLO-"ITALIC"

The theoretical scruple of not taking for granted the critical linguistic convergence turns out to be justifiably prudent in that, as shown by Tamburelli (2010), diglossia is actually the sociolinguistic situation that has characterized the Gallo-"Italic" area (like most areas of Italy) until the 1960s, with Gallo-"Italic" as the L-variety and Tuscan/Italian as the H-variety (see also Grassi, Sobrero, Telmon, 1997; Marcato, 2017). In fact, in 1951, 90 years after the official introduction of Tuscan/Italian as H-variety, only 10% to 18% of Italian citizens used Tuscan/Italian at home-Tuscan and Central Italian citizens included (see De Mauro, 1979). This situation began to change in 1960s when a new generation of Gallo-"Italic" parents, imitating TV celebrities, started speaking Italian (their second or foreign language) to their children in the home, beginning (but only then) an age of risk for the survival of Gallo-"Italic", thereby leading to "asymmetric" societal bilingualism (Tamburelli, 2010). On the ground of these considerations, even in the unrealistic case that we totally lacked qualitative data and structural descriptions of modern-day Gallo-"Italic" geolects, it would be in any case more cautious to presume that Gallo-"Italic" is likely to have maintained its ancient Gallo-Romance linguistic nature until the present, notwithstanding every possible century-old heteronomy towards Tuscan/Italian. Therefore, my request for empirical evidence for the occurrence of such a critical linguistic convergence that von Wartburg and other pro-Italo- scholars seem to take as a given (e.g. Loporcaro 2009), is, if anything, even more justified.

3.3.3. DIALECT STUDIES DESCRIBE GALLO-"ITALIC" AS STILL SHOWING WESTERN ROMANCE AND GALLO-ROMANCE TRAITS

In any case, we certainly do have qualitative data about modern-day Gallo-"Italic" geolects and several scholarly structural descriptions. According to these recent descriptive studies, even the urban Gallo-"Italic" geolects of our days still pervasively show in the lexicon all the linguistic traits that in von Wartburg (1967) define Western Romance and Gallo-Romance in particular (e.g. Loporcaro 2009, Maiden & Parry 1997, Lurati 2002, Hull 1982/2017). The only Western Romance trait that dialect studies consider as having widely disappeared from the Gallo-"Italic" geolects is the Latin final -S, which in any case persists productively in verbs, at least in Alpine Lombard (Merlo, 1959), as well as in some verbal and nominal relics in the rest of Lombardy-Milan and the lowlands included (e.g. "sista [/'sista/, be you]... lünezdi [/lynez'di/, Monday]", von Wartburg 1967: 31, [italic original]). However, there are reasons to not consider the loss of -S sufficient to change the grouping of the Po valley and Romagna from being grouped with uncontested Gallo-Romance to being grouped with Italo-Romance, either in a genealogical or in a synchronological perspective (see an introduction to this point in Section 3.2.7). In fact, in a genealogical perspective, language classification groups geolects that show the same innovations systematically and pervasively in *several* linguistic elements, since the more innovations a set of geolects share, the more likely it is that all (or most) of those innovations took place once in a common ancestor rather than several times in several distinct languages in an identical combination (see Tamburelli & Brasca 2018). It is therefore unclear why just *one* contact-induced change could be considered as sufficient to change, at one point of their linguistic history, the ascription of the Po valley and Romagna from one linguistic domain (i.e. Gallo-Romance) to its cousin linguistic domain (i.e. Italo-Romance). As argued above (Section 3.2.7), it is consistent to consider that only a fully fledged language replacement can justify that, for two different periods, one territory be ascribed to two different linguistic domains, corresponding to two distinct overordered branches of the genealogical tree. Such language replacement would account for the possible loss of (almost) all of the Western and Gallo-Romance defining traits in (almost) all of the modern-day Gallo-"Italic" lexicon and structures.

Not very differently, in a mere *synchronological* perspective, it seems more reasonable to assume that only the borrowing of *several* linguistic traits would be able to make a geolect linguistically

closer to the donor geolect than to the original sibling geolects. Indeed, Tamburelli & Brasca (2018) pointed out that scholars have increasingly expressed criticism towards the arbitrariness by which the defining traits are chosen in the linguistic classifications, traditionally based on qualitative analyses (see McMahon & McMahon, 2005; Starostin, 2010; Szmrecsanyi & Wolk, 2011), since these a priori selected traits are likely to affect the sub-grouping unjustifiably more than other possible traits (see Tamburelli & Brasca 2018 for details). This criticism towards the arbitrary choice of the defining traits seems to me specifically appropriate when dealing with synchronological classifications, as in the current Chapter 3 devoted to von Wartburg's claim, according to which it is the effect of contact that would motivate the change of classification/labelling for Gallo-"Italic".

Iannàccaro & Dell'Aquila (1999), too, illustrate the arbitrariness of the '-S loss' and similar criteria by which some scholars have *defined*⁶⁰ the "Italian dialects" group, pointing out how in historical linguistics it is normal practice to define languages within a continuum "on the basis of social, literary, historical, political criteria" and then choose the demarcating isoglosses a posteriori with respect to those social (etc.) criteria, in order for their geographic borders to match the ones of the politically-defined "language". These authors continue as follows:

 "... By choosing other parameters, such as the voicing of the voiceless intervocalic [consonants] (a parameter which moreover serves to distinguish between Western and Eastern Romance languages ...) or the reflexes of the late-Latin palatals, the boundaries between Italian and "other" would have been different" (Iannàccaro & Dell'Aquila, 1999: 10)⁶¹.

I would add to this analysis that, even in a mere synchronological perspective, what is arguable in the procedure described is not only the arbitrariness by which it is decided *what* traits would be relevant—which by itself would not exclude the possible usefulness of the resulting classification

⁶⁰ I would not say 'identified' here: see "identification" in Bailey, 1994: 9, Section 1.7.

⁶¹ "... anche nella linguistica storica questo procedimento è tutt'altro che inconsueto: si individuano, per ragioni sociali, letterarie, storiche, politiche, le lingue all'interno di un *continuum* e poi si scelgono come demarcative e delimitanti le isoglosse che più si addicono a rappresentare il confine precedentemente individuato: si definiscono ad esempio «dialetti italiani» (Pellegrini 1970, Tagliavini 1972 (1949) [see Tagliavini 1948 in the current References section], Ascoli 1873 [see Ascoli 1875 in the current References section], Ascoli 1878, Lausberg 1985.) quelli che palatalizzano i gruppi consonantici latini con -L- (PL, CL e simili), non conservano -S nei plurali delle II persone dei verbi e non palatalizzano C- prima di -A: isoglosse queste il cui percorso, in molti punti sovrapponibile, è quello che più si avvicina ai confini politici dell'Italia. Scegliendo altri parametri, quali ad esempio la sonorizzazione delle sorde intervocaliche⁶¹ (parametro che peraltro serve da distinzione fra lingue romanze occidentali e orientali...) o gli esiti delle palatali tardolatine, i confini fra *italiano* e «altro» sarebbero risultati diversi."

in some sort of typological researches having *particular* aims⁶²—but also *the limited number of* traits declared relevant. Indeed, considering the sole loss of -S as a classificatory criterion makes the "classification" scarcely useful for scientific purposes, as far as one intends to propose a general classification of Romance languages, like the ones that linguists normally propose in their classificatory studies. In fact, as we have seen, scientific classification aims to inform about the different degrees of affinity between the items classified (Simpson 1945, see Section 1.7), thus the most useful classifications are those that inform about a bigger number of traits shared exclusively by the members of each sub-group. For example, classifying animals according to the opposition 'mammal vs. non-mammal' informs zoologists about many particular natural traits that are shared by the individuals ascribed to those groups and seem naturally connected among them. That is why, albeit possibly scientifically legitimate, it is not usual to find scientific classifications of animals according to, say, the colour of their skin/fur/feathers. In fact, grouping together all the animals that have, say, red skin/fur/feathers, which is incontestably a natural trait of many individual animals (goldfish, red squirrels, red Cocker Spaniel dogs, red parrots, etc.), is (at best) predictive of a very little number of other shared natural traits, thus it is likely to be considered useful in a very limited amount of scientific research. In my research of Abstand-based classifications of Romance geolects, I presume that scholars consider their own proposal of Abstand-based classification as the most informative possible from the *Abstand* point of view. Therefore, if a scholar who evidently uses an Abstand criterion in his/her work proposes to ascribe Gallo-"Italic" to the Italo-Romance group, even in a synchronological (namely not exclusively genealogical) perspective, I suppose that s/he judges that Gallo-"Italic" shares more linguistic traits with the Peninsular geolects than with the members of other groups, e.g. Gallo-Romance. If this is not the case, the classification/label, even if possibly informative of *some* traits, turns out to be poorly informative from a *general Abstand* point of view, and a more informative one is suitable to be proposed in its place. It turns out that in von Wartburg (1967) the presence of the Latin -S is just one of the various traits that define Western Romance and oppose Gallo-Romance to Italo-Romance. It is therefore unclear why the loss of -S alone should be considered sufficient to obscure

⁶² "Ogni insieme di dati destinato ad essere classificato può esserlo *in vari modi*. Il classificatore deve dunque effettuare una serie di *scelte* o di *decisioni metodiche*, guidato in ciò ovviamente dalle sue posizioni *teoriche*... da precisare in anticipo" (Goebl, 1991: 342).

the Western Romance and Gallo-Romance identity of Gallo-"Italic", and why it should be judged as *counting more* than all the other traits that modern-day geolects of Northern Italy—and Gallo-"Italic" in particular—still share with the uncontested Western Romance, and in particular Gallo-Romance geolects.⁶³

This line of reasoning, that I have based on the concept of *shared traits*, can be proposed the other way around, making reference to the counterpart concept of *opposition*. In a classification, two groups oppose one another in virtue of some mutually exclusive traits. Therefore, in an *Abstand*-based "scientific" and *general* classification of geolects, I expect the label 'Italian' or 'Italo-Romance'—when attributed to Gallo-"Italic"—to mean that Gallo-"Italic" shows at least *prevalent* linguistic traits that the author considers relevant for opposing all Italian/Italo-Romance geolects to the members of all the other sub-groups (e.g. Gallo-Romance) from an *Abstand* standpoint. From this perspective too, besides the loss of -S, it is not clear in von Wartburg's view what other traits, which are exclusive to Italo-Romance and absent in Western Romance and Gallo-"Italic". As a consequence, it is not clear how these unspecified traits could be said to be prevalent in Gallo-"Italic" with respect to the ones that it shares with uncontested Western Romance and, in particular, Gallo-Romance geolects.

In the current section, 3.3.3, my criticism against the ascription of Gallo-"Italic" to Italian/Italo-Romance has been conducted with the arguments typical of the qualitative descriptions and analyses, in line with the traditional classificatory studies that I have analysed. However, as presented in Section 3.2.7, the historic-dialectological description of Gallo-"Italic" as genealogically Gallo-Romance could be reconciled with its being grouped with the Peninsular geolects *vs.* uncontested Gallo-Romance (provided that this is done via a dedicated synchronological nomenclature) by hypothesising that the Gallo-Romance and Western Romance traits that modern dialectologists still observe in modern-day Gallo-"Italic" geolects actually concern a minor amount of lexical and structural items, surviving in a by now predominantly Italo-Romance linguistic code. This scenario would basically collide with the "classical" diglossic scenario that scholars acknowledge for the Italy of von Wartburg's time (see Section 3.3.2), and this fact in turn makes the 'critical convergence hypothesis'—i.e. the post-Wartburg hypothesis—

⁶³ I will shortly get back to the possible political function of this sort of '-S loss jingoism' in further research.

particularly in need of being tested and not being taken as a given. To test this hypothesis, a quantitative method is needed which eliminates the issue of subjective trait selection, and allows us to measure in an objective way *how much* the Gallo-"Italic" geolects have possibly become similar to the Peninsular geolects, and in particular whether Gallo-"Italic" became *more similar* to the bordering Peninsular geolects than to the bordering uncontested Gallo-Romance geolects. In the next section I will summarise some quantitative scholarly studies that have already addressed some aspects of the above issue.

3.3.4. SCHOLARLY PROPOSALS OF SYNCHRONOLOGICAL CLASSIFICATION FOR GALLO-"ITALIC" BY QUANTITATIVE METHODS: THE DIALECTOMETRIC SCHOOL OF SALZBURG⁶⁴ Some scholarly proposals of synchronological classification for the geolects of Italy by quantitative methods come from the Dialectometrical School of Salzburg University (DM-S, in some texts SDMS) (Goebl & Winterleitner, 1971; Goebl, 1981, 2008; Goebl et al., 2019 dialektkarten.ch). As far as Italy is concerned, the dialectometric school of Salzburg analyses the data provided by the linguistic atlas AIS, *Sprach- und Sachatlasses Italiens und der Südschweiz* (Jaberg & Jud, 1928-1940). In particular, the data analysed are obtained from 380 of the Romance AIS data points plus two "fictitious" data points added by the researchers, corresponding to standard French and standard Italian. For sake of brevity, I will quote below some passages taken from published studies presenting the aspects of the Salzburger analytical methods and aims that are relevant for the current purposes.

1. "The primary objective of DM [dialectometry] is the synthetic quantitative exploration and interpretation of linguistic atlas data or similar data collections...

DM intends (with relatively simple statistic means) to uncover in linguistic atlas data lower and higher ranking structural patterns which had hitherto been hidden to the observer at first glance. ...

Within the scope of philology, the results elaborated by dialectometry are also of diachronic relevance. In addition, a great number of synchronically important results... can be found." (Goebl, 2010: 64).

⁶⁴ In the work of Hans Goebl that I am aware of, the Gallo-Romance genealogical and/or synchronological nature of Gallo-"Italic" is not explicitly stated. In my opinion, however, it results from the analyses of his data, as I will show in Section 3.3.4, and as it seems to be implicitly acknowledged in some of Goebl's statements (e.g. Goebl, 2008: 44, 58). However, these cases of implicit reference to the Gallo-Romance nature of Gallo-"Italic" cohabit with at least as many statements in which Gallo-"Italic" is referred to as not being part of Gallo-Romance (e.g. Goebl, 2008: 26, 43, 45, 48).

2. "... [one of the algorithms we use] (the Ward algorithm) belongs to the class of "hierarchic-agglomerative procedures". By a successive fusion or agglomeration of two very similar elements... – beginning with the... "leaves" of the future tree – a binary hierarchy is generated. In this process, the number of the agglomerated clusters (= dendremes) is progressively reduced, leading to the final isolation of two big clusters, which can be united at the stem (or the root) of the tree. ... [D]endrographic DM is able to reveal relatively deep geolinguistic patterns..." (Goebl, 2010: 72).

Goebl (2008) explains why standard French and standard Italian were added to the set of AIS geolects:

3. "[To the 380 Romance AIS data points] we have... added two fictitious data points corresponding to standard French and standard Italian..." (Goebl, 2008: 33, my translation).⁶⁵

4. "The inclusion of the linguistic potentials of Italian and French ... was relatively easy from a purely technical point of view and very useful from a geolinguistic point of view. In fact, the respective choroplethic profiles make it possible to examine the spatial impact of the two standard languages which, as very powerful linguistic agents, influenced to varying degrees, 'practically since always', the basilects of the entire network" (Goebl, 2008: 43, [my translation]).⁶⁶

Goebl (2008) presents the results of the dialectometric analyses conducted on a partial amount of AIS data.⁶⁷ The more recent website <u>http://dialektkarten.ch/dmviewer/index.it.html</u> (Goebl et al., 2019 dialektkarten.ch, the data I currently use were checked again in December 2020) presents the results of the same analyses conducted on a larger amount of data than in Goebl (2008). This interactive website allows the user to view the results of analyses conducted on each of the following corpora of data: *total corpus* (both phonetic and lexical data, taken from 3,911 working maps), *total phonetics* (from 1,776 working maps), *consonantism* (from 805 working maps), *vocalism* (from 873 working maps), and *vocabulary* (from 1,225 working maps). Below I will present the results of some analyses which are useful for the current purposes.

⁶⁵ "[Ai 380 punti romanzi AIS a]bbiamo... aggregato... due punti fittizi relativi alle lingue standard del francese e dell'italiano..."

⁶⁶ "L'inclusione dei potenziali linguistici dell'italiano e del francese... era relativamente facile dal punto di vista meramente tecnico e molto utile dal punto di vista geolinguistico. In effetti, i rispettivi profili coropletici consentono di esaminare l'impatto spaziale delle due lingue standard le quali, in quanto agenti linguistici molto potenti, influivano in varia misura 'praticamente da sempre' sui basiletti dell'intera rete."

⁶⁷ "3,076 working maps, taken from 967 original AIS maps [out of 1,705]" (Goebl 2008: 25, 32, 36).

3.3.4.1. ISOGLOSS MAPS. A kind of map produced by the Salzburger analyses is the isogloss map which graphically represents the "Relative Distance Values" (RDV) between the AIS data points geolects. "The message of these isogloss maps is largely similar to that of older, manually produced isogloss syntheses. The segmentation effects visible on them thus largely correspond to the traditional notions of *dialect boundaries*" (Goebl et al., 2019 dialektkarten.ch; see also Goebl 2008). The distance value (RDV) is measured by the Salzburger researchers on the basis of two different "similarity indexes": RIV (Relative Identity Value) and WIV (Weighted Identity Value). Among the values provided by the Salzburger researchers on the website dialektkarten.ch (i.e. the RDV both RIV and WIV concerning all pairs of AIS data points), I have selected and arranged in Table 3.1 below the ones that are relevant for the current aims. These are the RDV both RIV and WIV concerning the pairs of data points bordering with each other on the two border lines under investigation, namely between Tuscan and Emilian/Romagnol along the Apennine ridge, and between uncontested Gallo-Romance of Piedmont and Piedmontese (Gallo-"Italic") in the Western Alps. I will consider as 'uncontested Gallo-Romance data points of Piedmont' the ones that are considered as such in Allasino et al. (2007) (see "comuni appartenenti a una delle quattro minoranze linguistiche del Piemonte", 2007: 26, 28, 29, 31), based in turn on Calosso & Telmon (1973). I will report the results relative to the *total corpus* data since they are more informative about the overall linguistic distance between the geolects concerned.

Piedmontese	Uncontested	RDV-RIV	RDV-	Emil./Rom.	Tuscan AIS	RDV-	RDV-
AIS data point	Gallo-Romance		WIV(1)	AIS data	data point	RIV	WIV(1)
	AIS data point			point			
Vico Canavese	Ronco Canav.	29.99	59.39	Sologno	Campori	35.04	72.80
Corio	Ronco Canav.	28.91	57.60	Sestola	Campori	32.05*	70.01
Corio	Noasca	27.98	56.54	Sestola	Prunetta	33.86	71.92
Corio	Ala di Stura	24.28	50.39	Sestola	Barberino	35.48	74.16
Corio	Bruzolo	26.00	53.74	Savigno	Barberino	39.39	77.71
Corio	Giaveno	23.55	49.96	Loiano	Barberino	37.41	75.19
Torino	Giaveno	21.72	47.89	Molino	Barberino	35.45	70.98
Pancalieri	Giaveno	19.94	43.60	Molino	Firenze II	35.05	70.73
Pancalieri	Pramollo	32.10*	62.42	Molino	Stia	35.37	70.99
Pancalieri	Ostana	26.97	55-71	S. Agata F.	Stia	35.62	73.76
Villafalletto	Ostana	27.30	56.20	S. Agata F.	Caprese	33.51	71.19
Villafalletto	Pontechianale	32.08*	63.35				
Villafalletto	Pietraporzio	32.23	63.68				
Villafalletto	Valdieri	24.91	52.67				
Villafalletto	Limone P.te	27 93	57.65				

Table 3.1. Relative distance values (RDV) between pairs of bordering Gallo-"Italic", uncontested Gallo-Romance, and Tuscan AIS data points geolects. For each pair of data points, results are given based on both similarity indexes, RIV (Relative Identity Value), and WIV (Weighted Identity Value). For the meaning of the asterisks, see the lines below.

All eleven RDV-WIV(1) distance values obtained across the Apennines are higher than all the fifteen analogous values obtained from the Western Alps. Furthermore, ten out of eleven RDV-RIV(1) values of distance obtained across the Apennines are higher than the analogous fifteen values obtained on the Western Alps. The asterisks in Table 3.1 serve to focus on the fact that only between Sestola and Campori (across the Apennines) is the RDV-RIV(1) value (32.05) slightly lower than some values obtained across the Piedmontese-Occitan border, namely between Pancalieri and Pramollo (32.10) and between Villafalletto and Pontechianale (32.08). These results indicate that the linguistic distance is generally greater across the Apennines, namely between Tuscan and Emilian/Romagnol, than across the line dividing Piedmontese (Gallo-"Italic") and the uncontested Gallo-Romance of Piedmont.

Since the post-Wartburg hypothesis concerns the classification of Gallo-"Italic" as a whole, and not only of its geographically peripheral varieties, it seems useful to integrate these results with ones of another dialectometric analysis conducted by the Salzburger researchers and which is called *similarity analysis* (Goebl, 2008; Goebl et al., 2019 dialektkarten.ch).

3.3.4.2. SIMILARITY ANALYSIS. This kind of analysis compares pairs of data points taking a single data point as reference point. Below I will compare the various similarity measures between Milan

(reference point) and the Occitan and Tuscan AIS geolects bordering with Gallo-"Italic", also analysed above. I have selected and taken all these measures from the ones calculated and provided by the Salzburger researchers on the website dialektkarten.ch (which concern all AIS data points). As presented above (Section 2.1.1.2.4), Milanese is an "innovating and Italianizing" geolect (Sanga, 1997: 255). Hence, if Milanese were to result as being more similar to at least some uncontested Gallo-Romance geolects than to some Apennine Tuscan geolects, this would suggest that the other Gallo-"Italic" geolects, most of which are more conservative and less Italianizing than Milanese, are likely to have remained even more similar to uncontested Gallo-Romance. The below data come from dialektkarten.ch (December 2020):

Occitan data	RIV	WIV	Tuscan data	RIV	WIV
point			point		
Ronco Canav.	61.18	25.90	Campori	62.18*	22.29
Noasca	62.10	26.75	Prunetta	61.71	22.43
Ala di Stura	63.12	27.86	Barberino M.	60.33	21.25
Bruzolo	61.93	25.98	Firenze II	61.49	22.57
Giaveno	65.66	30.46	Stia	60.34	20.94
Pramollo	59.03	23.42	Caprese M.	61.57	21.88
Ostana	61.69	25.66			
Pontechianale	59.23	22.86			
Pietraporzio	59.85	23.59			
Valdieri	62.32	26.01			
Limone P.te	63.34	27.30			

Table 3.2. Similarity values between Milanese and the Occitan and Tuscan AIS geolects bordering with Gallo-"Italic". Results are given based on both similarity indexes, RIV (Relative Identity Value), and WIV (Weighted Identity Value).

All the WIV similarity measures obtained between Milan and the six Tuscan AIS data points bordering the Gallo-"Italic" domain are lower than all the eleven WIV measures between Milan and the uncontested Gallo-Romance AIS data points bordering the Gallo-"Italic" domain.

Furthermore, comparing all the six RIV values obtained across the Apennines with the six highest RIV values obtained on the Western Alps, it turns out that only one Tuscan data point (Campori) scores higher than some Occitan data point (precisely two, Noasca and Bruzolo).

The results of this similarity analysis are at least far from indicating that Milanese, an "Italianizing" Gallo-"Italic" geolect (Sanga, 1997: 255), got unquestionably more similar to the Tuscan geolects bordering the Gallo-"Italic" domain than to the uncontested Gallo-Romance geolects bordering the Gallo-"Italic" domain. As such, there is all the more reason that this should be true for most Gallo-"Italic" geolects, which are less Italianizing than Milanese. Moreover and importantly, in order for these similarity comparisons to be useful for assessing the degree of convergence of Gallo-"Italic" towards Italo-Romance, one should keep in mind the abundant flow of loans from Cisalpine towards Tuscan geolects-hence to the Tuscan literary language-and towards Southern Peninsular geolects, which scholars unanimously date since the early Middle Ages (Rohlfs, 1949-1966; see also Hull, 1982) and consider responsible for a good deal of the convergence between Gallo-"Italic" and Peninsular geolects. The point is that, in the case that such convergence could have an effect on a synchronological classification, it should more correctly be described as a convergence of the Peninsular geolects towards Gallo-Romance, and not as a convergence of the Cisalpine Gallo-Romance towards Italo-Romance (Rohlfs 1949-1966; 1972; see Hull 1982). Importantly, the scholarly literature acknowledges that such a convergence of Tuscan geolects towards Cisalpine is particularly strong in the Tuscan localities near the Apennine ridge (Rohlfs 1949-1966, Hull 1982), like the ones involved in the current comparisons, and this further strengthens the pro-Gallo- interpretation of the results of this dialectometric study. These considerations also apply to the isogloss maps of the precedent study (which are equally based on similarity indexes, see Section 3.3.4.1) and to the studies presented in the next section.

3.3.4.3. HIERARCHICAL CLUSTERING ANALYSIS. Another kind of analysis conducted by the Salzburger Dialectometric School is the *hierarchical clustering analysis.* This analysis directly addresses the current classificatory issue, since it compares all the data points with each other simultaneously and groups them in a hierarchical order based on their reciprocal similarity values. Goebl presents this kind of analysis as follows.

1. "One of the most powerful means of numerical classification in general and SDMS in particular has been, for over 20 years, the 'agglomerative hierarchical classification' (CGA) ... It is ... a quantitative classification of the totality of the data included in the respective similarity matrix" (Goebl, 2008: 56).⁶⁸

⁶⁸ "Uno dei mezzi più potenti della classificazione numerica in genere e della SDMS in particolare è, da oltre 20 anni, la 'classificazione gerarchica agglomerativa' (CGA)... Si tratta... di una classificazione quantitativa della totalità dei

2. "The dendrographic algorithm... 'Complete Linkage' [r]epresents one of the algorithms (like 'Average Linkage', the algorithm of Joe Ward Jr., etc.) whose usefulness for the purposes of geolinguistics has been proven several times based on geolinguistic data of a very diverse origin" (Goebl, 2008: 57).⁶⁹

3. "Geolinguistically, the tree [hierarchical clustering] can... be interpreted diachronically and synchronically. The diachronic interpretation simulates the *progressive fragmentation* of a given linguistic area, assuming that this linguistic area was originally homogeneous. ... The synchronic interpretation of the genealogical trees concentrates on spatial classification and regionalization, where the position of the dendremes in the branches of the tree indicates their *relative reciprocal similarity*" (Goebl, 2010: 72 [emphasis added]).

In Goebl 2008, two hierarchical clustering analyses are conducted. Both analyses include phonetic and lexical data coming from 3,076 'working maps', prepared in turn by the researchers on the basis of 967 out of 1,705 original AIS maps. What distinguishes the two analyses is the kind of algorithm used, *Complete Linkage* in one case and *Joe Ward Jr.*'s in the other. In both analyses, the first branching of the tree (or first clustering) results in a division of the 382 data points/geolects analysed as follows:

- one branch puts together the entire Cisalpine with standard French and with the uncontested Gallo-Romance and Rhaeto-Romance AIS geolects;
- the other branch puts together the rest of the geolects, namely the ones of Italy south of the Massa-Senigallia line (Peninsular Italy), the ones of Sardinia, and standard Italian.

An equal clustering results from the analyses presented in the website http://dialektkarten.ch/dmviewer/index.it.html. As we have seen, in this interactive website, the user can view the results of analyses conducted by the School of Salzburg more recently and which are based on a larger amount of data than in Goebl (2008). Different clustering analyses are conducted separately on different corpora of data: total corpus, total phonetics, consonantism, vocalism, vocabulary (see also Section 3.3.4). Each corpus of data can be analysed by both the *Ward* and the *Complete Linkage* algorithm. For each analysis, the software can be asked to generate from 2 to 20 clusters. In both (Ward and Complete Linkage) total corpus two-clusters analyses

dati compresi nella rispettiva matrice di similarità."

⁶⁹ "L'algoritmo dendrografico… 'Complete Linkage' [r]appresenta uno degli algoritmi (come 'Average Linkage', l'algoritmo di Joe Ward Jr., ecc.) la cui utilità per i propositi della geolinguistica è stata provata parecchie volte in base a dati geolinguistici di origine assai diversa."

(*total corpus* analyses are the relevant ones for the aims of the current study), the whole of Cisalpine clusters with standard French, with the uncontested Gallo-Romance geolects and with Rhaeto-Romance vs. Peninsular Italy. According to a "diachronic interpretation" (see example 3 above) of these results (and of the equal results of Goebl 2008), the Gallo-Romance genealogical nature of Gallo-"Italic" (and of the entire Cisalpine) thence emerges. According to a synchronological, namely "synchronic interpretation" (see example 3 above)—which is the relevant one in the present chapter—these results suggest, against the post-Wartburg hypothesis, that Gallo-"Italic" (with the rest of Cisalpine) is still part of the same continuum with the uncontested Gallo-Romance in discontinuity with Peninsular geolects. The two groups resulting from the two-clusters analysis border along the Massa-Senigallia line, like the genealogically identified Gallo-Romance and Italo-Romance groups, across which the linguistic similarity decreases more abruptly than across any other line running between the Apennine ridge and the uncontested Gallo-Romance areas. This in turn means that Gallo-"Italic" is still synchronologically classified with the rest of Gallo-Romance rather than with Italo-Romance. Beyond the scope of the current study, these results suggest that the same classification would also be appropriate for the rest of Cisalpine, Venetan included.

3.3.4.4. CONCLUSIONS. In summary, none of the Salzburger dialectometric studies presented provide evidence lending support to the post-Wartburg hypothesis. On the contrary, they indicate that, in a synchronological perspective—which is the relevant one in the current chapter—Gallo-"Italic" groups more closely with the bordering Gallo-Romance than with the bordering Italo-Romance geolects. This means that the modern-day Gallo-"Italic" geolects are in any case more properly classified with Gallo-Romance than with Italo-Romance, also in a synchronological perspective. As far as I am aware, no quantitative studies were conducted by other researchers whose results contradict the ones of the Salzburger School.

3.4. CONCLUSIONS ON VON WARTBURG (1967) AND THE PRO-ITALO- TRADITION

In conclusion, classifying and labelling Gallo-"Italic" as part of *Italo-Romance* or *Italian* is unsuitable for several reasons, the first of which is that the labels 'Gallo-Romance' and 'Italo-Romance' are normally used as part of a genealogical nomenclature, and linguists describe Gallo-"Italic" as genealogically Gallo-Romance (von Wartburg, 1967; Lausberg, 1965; Pellegrini, 1973; 1992; Hall, 1976; Loporcaro 2009). The Gallo-Romance genealogical nature of Gallo-"Italic" also emerges from quantitative analyses, namely the Salzburger clustering analyses and Tamburelli &

Brasca (2018). Therefore, a consistent use of the traditionally genealogical labelling should define Gallo-"Italic" as a Gallo-Romance and not as an Italo-Romance sub-group.

Ascribing Gallo-"Italic" to Italo-Romance could be consistently reconciled with the Gallo-Romance genealogical profile of the ancient Cisalpine geolects only hypothesizing that a fully fledged language shift occurred in the past centuries, as a consequence of which the ancient Cisalpine Gallo-Romance geolects were replaced by some Italo-Romance geolects, currently and possibly showing just a few Gallo-Romance substrate effects and lexical relics. This being the case, the two labels discussed would actually refer to two distinct *Abstand* entities. However, no scholarly study hypothesizes, as far as I am aware, that such a fully fledged language replacement occurred. A Gallo-Romance continuity also surfaces from the Salzburger analyses.

If ascribing Gallo-"Italic" to 'Italo-Romance' or 'Italian' is motivated by some *Ausbau* (or in any case *non-Abstand*) considerations, such as the historical definition of Cisalpine as a part of Augustan and/or geographical "Italy", the possible medieval orientation of Cisalpine towards the Italian cultural sphere, the adherence of 16th century Cisalpine writers to Tuscan/Italian literary language/models, the (probably more recent) heteronomy towards Italian literary language, the possible feeling of Italian national partnership of modern-day Cisalpine citizens and the like, then I argued that (*a.*) an independent *Ausbau*-dedicated nomenclature—different from any *Abstand*-dedicated one(s)—should be used to express such a grouping; (*b.*) and that it should be used in a specific *Ausbau*-based classification, distinct and independent from any possible kind of *Abstand*-based classification" uninformative, hence non-scientific (see the 'mixed criterion tradition' in Chapters 1 and 2). In this sense, Hull (1982/2017) is the only study that I am aware of that proposes an *Abstand*-based classification of the Cisalpine geolects within the Romance family that is consistent with their *Abstand* description.

Instead, if ascribing Gallo-"Italic" to 'Italo-Romance' is motivated by the hypothesis that heteronomy (mentioned in bullet point 3), albeit not causing a fully fledged language replacement, led Gallo-"Italic" to such a quantity of *Abstand* convergence towards Tuscan/Italian that today it appears linguistically (*Abstand*) more similar to Italo-Romance than to Gallo-Romance, and even if we assume that there is evidence in support of this hypothesis (the post-Wartburg hypothesis), I argued that the nomenclature used for such *synchronological* classification should be different and

distinguishable from the one used for a *genealogical* classification. Therefore, the label 'Italo-Romance', already used in the genealogical classification, should not be used to name this hypothetical sort of strongly Tuscanising *Sprachbund*.

If the label 'Italian' in particular, attributed by von Wartburg to both Gallo-"Italic" and Peninsular geolects, just refers to such hypothetical sort of *Sprachbund*, then it should be harmoniously used alongside other formally similar members of a synchronological nomenclature, which should be distinguishable from a genealogical nomenclature. Instead, in von Wartburg (1967), the label "Italian" shows up alongside the typically genealogical labels "Gallo-Romance", "Ibero-Romance" and "Rhaeto-Romance", and all these labels name groups placed at the same categorial level (see von Wartburg 1967, Map 10, reported in Figure 3.2). A logically possible interpretation of this fact is that, similarly to what was observed in Chapter 2 about scholars who mix *Abstand* and *Ausbau* classificatory criteria, von Wartburg mixes the genealogical and the synchronological classificatory criteria in a formally unidimensional "classification". This being the case, besides having mixed the classificatory criteria—as the 'mixed criterion' scholars did—von Wartburg (differently from these latter) would have also mixed the nomenclatures. Similarly to what was argued in Chapters 1 and 2, this mix of classificatory criteria and nomenclatures would make the nomenclature(s) used uninformative, hence useless for scientific purposes.

In any case, such a critical convergence towards Tuscan/Italian was not demonstrated by von Wartburg, nor by other scholars. On the contrary, clustering analyses conducted by the School of Salzburg (Goebl 2008 and Goebl et al., 2019 dialektkarten.ch) group modern-day Gallo-"Italic" geolects more closely with uncontested Gallo-Romance than with Peninsular geolects, demonstrating at least that there is no evidence that Gallo-"Italic" became closer to Italo-Romance than to Gallo-Romance. On the contrary, they indicate that Gallo-"Italic" is still more suitably classified with Gallo-Romance than with Italo-Romance.

In the next chapter, I will present another quantitative method recently developed by which various scholars have determined and compared the linguistic distance between closely related varieties in various linguistic areas. This method tests the actual (mutual) intelligibility between speakers. Through the results of this empirical method, I will contribute to settle the issue of the synchronological classification of Gallo-"Italic".

127

CHAPTER FOUR

EMPIRICALLY TESTING THE POST-WARTBURG HYPOTHESIS BY COMPARING INTELLIGIBILITY BETWEEN OCCITAN, GALLO-"ITALIC", AND TUSCAN GEOLECTS

4.1. THEORETICAL BACKGROUND

After having rejected the pro-Italo- stance on the basis of *epistemological* arguments in Chapters 1, 2, and 3, and having shown that previous quantitative research (specifically dialectometry) based on linguistic atlases' data did not provide evidence supporting the post-Wartburg hypothesis (Section 3.3.4), in the current section I will provide empirical evidence supporting the pro-Gallo-(and in any case an anti-Italo-) synchronological classification for Gallo-"Italic". I will show that the post-Wartburg hypothesis can be tested empirically by means of functional intelligibility testing, namely by testing intelligibility between native speakers of the geolects under investigation.

In Section 4.1.1, I will show that traditional historical-linguistic literature assumes the existence of a link between differences in intelligibility and differences in objective linguistic distance (i.e. in *Abstand*). Importantly, I will also show that more recent quantitative research demonstrates the existence of this link. This enables functional intelligibility testing to be used as an adequate means for determining and comparing levels of *Abstand* between related geolects. On this theoretical ground, in Section 4.1.2, I will show the particular aims of this empirical study. In particular, in Section 4.1.2.1, I will show that the post-Wartburg hypothesis makes three predictions in terms of intelligibility rates—in the light of the newly introduced predictions—and summarize more concisely the predictions themselves and their linguistic interpretation. Then, in Section 4.1.3, I will show various methods by which scholars have measured intelligibility. In Section 4.1.4, I will introduce the control variables, namely the variables that, according to previous research, could

have an effect on intelligibility scores besides objective linguistic distance, and that for this reason should be controlled. Finally, in Section 4.1.5, I will introduce the concept of symmetry in intelligibility and discuss briefly its applicability to the current study.

4.1.1. LINK BETWEEN OBJECTIVE LINGUISTIC DISTANCE AND (MUTUAL) INTELLIGIBILITY

Intelligibility is "the extent to which the native speaker understands the intended message" (Derwing & Munro, 1997: 2). Already in 1959, Hans Wolff writes that "data on intelligibility between two linguistic media has been used (*a.*) as a convenient criterion for distinguishing the concepts of language and dialect; and (*b.*) for determining 'dialect distance', i.e., the degree of divergence between dialects of the same language or between closely related languages" (Wolff, 1959: 34). More recent quantitative research shows that differences in intelligibility scores are directly linked to differences in linguistic distance (*Abstand*) between the speaker's geolect and the listener's geolect (Gooskens, 2006; 2007a; Munro, Derwing & Morton 2006; Tang & van Heuven, 2009)¹:

1. "Intelligibility can to a large extent be predicted by phonetic distance..." (Gooskens, 2007a: 445).

2. "We argue that mutually intelligibility testing is an adequate way to determine how different two languages or language varieties are. ...

[T]he degree of mutual intelligibility... can be predicted from objective measures (lexical similarity and phonological correspondence)..." (Tang & van Heuven, 2009: 709).

Importantly, in the quoted studies, the measures of objective linguistic distance (i.e. of *Abstand*)— which were correlated to intelligibility measures—were obtained by means of *dialectometric* methods, which, as we have seen, avoid the classificatory shortcomings deriving from arbitrary trait selection (Section 3.3.3 and 3.3.4.3 example 1; see Tamburelli & Brasca 2018 for details). In particular, in Gooskens' work (2007a), Levenshtein distance was used, which "has proved [to be] a useful way of measuring [linguistic] distances between dialects and closely related languages" (Gooskens 2007a: 446; see Gooskens & Heeringa, 2004a, 2004b), while in Tang & van Hueven

¹ See also Tamburelli (2021a: 34): "[I]t is now well documented that intelligibility levels correlate with linguistic distance (e.g. Gooskens 2006; Munro, Derwing, & Morton 2006): the further away a variety is from one's own phonology, grammar, and lexicon, the harder it will be to understand."

(2009) "two objective measures of linguistic distance, viz. a lexical similarity index (LSI...) and a phonological correspondence index (PCI)..." were used (Tang & van Heuven 2009: 724). These two indexes were elaborated on the basis of "an impressive body of digital resources" established by Chinese linguists (Tang & van Heuven 2009: 711).

In any case, the correlation between intelligibility and linguistic distance resulting from the above studies provides empirical ground to what seems to have been an axiomatic assumption at the basis of the entire comparative research since its beginning, and at the basis of the use of the language family tree itself as a descriptive model. Indeed, in the comparative literature, when two dialects of the same language develop linguistic changes independently from one another, due for instance to emigration or geopolitical separation of the respective sub-communities, they are understood to lose mutual intelligibility. Moreover, "if the divergence gets so wide as to hinder the mutual *intelligibility*... we can then say that each sub-community has got an independent linguistic community endowed with its own language" (Shukla & Connor-Linton, 2008: 63-64 [my translation to English from Italian, emphasis added]²). Scholars call these newly separated languages, stemming from the same immediate ancestor language, "sister" languages (Campbell, 1998/2006; Shukla & Connor-Linton, 2008). In historical linguistics, the link between linguistic distance and intelligibility is therefore assumed when defining the very concepts of language *vs.* dialect. We can summarise this concept by following a series of statements and definitions in Campbell (1998/2006):

3. "*Mutual intelligibility*: when speakers of different linguistic entities can understand one another. This is the principal criterion for distinguishing dialects of a single language from distinct languages" (Campbell 1998/2006: 217).

4. "In time, dialects of the proto-language develop through linguistic changes in different regions where the language was spoken... and then later *through further changes the dialects become distinct languages*" (Campbell, 1998/2006: 122 [emphasis added]).

5. "*Dialect* means only a variety (regional or social) of a language, which is mutually intelligible with other dialects of the same language. 'Dialect' is not used in historical linguistics to mean a little-known

² "Se la divergenza diviene così ampia da impedire la comprensibilità reciproca fra le due sottocomunità, allora diciamo che ciascuna sottocomunità è diventata una comunità linguistica indipendente dotata di una sua lingua propria."

('exotic') or minority language, and it is no longer used to refer to a daughter language of a language family, though the word has sometimes been used in these senses.

Language means any distinct linguistic entity (variety) which is mutually unintelligible with other such entities" (Campbell, 1998/2006: 186).

In summary, in historical linguistics, levels of intelligibility are traditionally assumed to parallel levels of objective linguistic distance (i.e. *Abstand*) and relatedness between geolects. Importantly, this parallelism was demonstrated in more recent quantitative research.

4.1.2. AIMS OF THE CURRENT STUDY

Based on the above considerations and on the Abstand descriptions presented in von Wartburg (1967), I assume that, before the purported critical convergence claimed by von Wartburg, the Gallo-"Italic" geolects were more intelligible to their bordering Occitan (sibling) geolects than to their bordering Tuscan (second-cousin) geolects. Moreover, I argue that a possibly critical (in the sense presented in Section 2.2.1) amount of linguistic convergence of the ancient Gallo-Romance geolects spoken in the Po valley and Romagna towards Tuscan/Italian, such as to make the former become linguistically more similar to the latter than to their sibling (uncontested Gallo-Romance) Occitan geolects (post-Wartburg hypothesis), would have a parallel communicative counterpart. In particular, it would predict a reverse of the original intelligibility situations across the two borders at issue, namely, it would predict a currently higher level of intelligibility across the Tuscan-Gallo-"Italic" border than across the Occitan-Gallo-"Italic" border. Alternatively, a situation where Gallo-"Italic" showed some amount of linguistic convergence towards Tuscan/Italian but not such to reverse the original intelligibility situation should be regarded as part of the ordinary dynamics of heteronomy between languages, like between Occitan of Italy and Tuscan/Italian, or between South Tyrol Bavarian and Tuscan/Italian, where the mere existence of effects of convergence does not seem in its own right to suggest to scholars to propose for these heteronomous varieties a synchronological classification/labelling that is different from their genealogical one. Indeed, despite showing some effects of convergence towards Italian, the geolects of Western Piedmontese Alps are currently still referred to as 'Occitan' and 'Gallo-Romance' in scholarly literature, not as 'Italo-Romance'; and the genealogically non-Romance varieties of South Tyrol-just to make a macroscopic and hopefully for this reason clear example-are still referred to as 'Germanic' and 'Bavarian', not as 'Romance' or 'Italo-Romance'³. This means that measures of intelligibility collected from monolingual speakers of von Wartburg's time could indicate differences between objective linguistic distances, allowing one to test the post-Wartburg hypothesis. However, in the past decades, when the literature analysed in the current study was being written, scholars did not, as far as I am aware, attempt to develop or apply any methods with which to measure intelligibility between the geolects of interest. Pellegrini (1975) generically refers to the well-known lack of mutual intelligibility between the geolects of Italy:

1. "It is well known that the mutual understanding between a Northern Italian and a Southern Italian is almost always impossible when both express themselves in local and archaic linguistic means which are not influenced by the Italian koine. I could cite many testimonies of this." (Pellegrini, 1975: 64-65; see also 1970: 222).⁴

However, no systematic intelligibility studies followed this statement, nor comparisons with intelligibility across the Occitan–Gallo-"Italic" border or across the western Alpine ridge. Some early attempts at elaborating methods for measuring mutual intelligibility are in Voegelin & Harris (1951) and Wolff (1959), but they do not involve the geolects of current interest, and neither do more recent studies.

In the present chapter, I will try to compensate for this lack. Indeed, in the next Section 4.1.2.1, I will show that the post-Wartburg hypothesis makes some predictions in terms of intelligibility that can be experimentally tested. I will (measure and) compare intelligibility between pairs of geolects spoken along a chain of localities running from Occitan-speaking valleys of French Alps to Apennine Tuscany, passing through the Gallo-"Italic" area (Po valley and Romagna), thus testing the post-Wartburg hypothesis.

³ I mention South Tyrol Bavarian on purpose. Indeed, the considerable difference in terms of amount of linguistic distance between Tuscan and Gallo-"Italic" on the one hand, and between Tuscan and Bavarian on the other hand is not relevant to the rationale of this example: both South Tyrolean and Gallo-"Italic" geolects have to be demonstrated to be more similar to Italo-Romance geolects than to their sibling geolects (respectively Bavarian/Upper German and Gallo-Romance) in order to be grouped with Italo-Romance geolects in a synchronological classification of present-day geolects.

⁴ "È risaputo che la comprensione reciproca tra un Italiano del Nord e uno del Sud, qualora ambedue si esprimano in un mezzo linguistico locale e arcaico non influenzato dalla koiné italiana, risulta quasi sempre impossibile e di ciò potrei citare ampie testimonianze."
4.1.2.1. PREDICTIONS MADE BY THE POST-WARTBURG HYPOTHESIS IN TERMS OF INTELLIGIBILITY

Let's consider the geolects spoken in six localities situated on a line running from the Occitan Alps of France up to the Tuscan Apennine mountains, passing through the Gallo-"Italic" area (Po valley and Romagna), as in Figure 4.1 below:



Figure 4.1. Sequence of six localities (1-6) and their respective linguistic areas (reported in the cells above) included between the Occitan Alps of France and the Tuscan Apennines. See Figure 4.6 in Section 4.2.5.1 below for the actual collocation of these six localities in the geographical area of interest. The blue triangles (on the left) represent the Alpine geographical boundary; the brown/red triangles (on the right) represent the Apennine geographical boundary. Their difference in terms of graphic size just intends to mirror the difference of average height between the two real mountain ranges, which is not relevant to the rationale and design of this study.

Moreover, let us reiterate the post-Wartburg hypothesis (see Section 3.2.8), which can be concisely summarised as follows: 'Gallo-"Italic" was linguistically more similar to the bordering uncontested Gallo-Romance geolects but then became more similar to the bordering Italo-Romance geolects'. Based on the above considerations about the link between objective linguistic similarity and intelligibility, the post-Wartburg hypothesis makes three distinct testable predictions about intelligibility between the above six geolects:

PREDICTION 1. Today (and already in von Wartburg's time) intelligibility is higher between geolects 5 and 6 (Romagnol and Tuscan) than between geolects 2 and 3 (Occitan of Italy and Piedmontese).

However, it could be argued that testing this prediction is not sufficient for the aims of the current study. Indeed, if the test results indicated that Prediction 1 is not borne out—showing that intelligibility of Romagnol to Tuscan speakers is lower than intelligibility between Occitan of Italy and Piedmontese speakers—this fact could be potentially explained by the following counter-conjecture, which makes those results logically reconcilable with the post-Wartburg hypothesis:

a. Occitan of Italy became linguistically closer to Piedmontese (assumed in turn to be linguistically closer to Italo-Romance than to Gallo-Romance) than to Occitan of France as

an effect of its heteronomy towards Piedmontese and Italian. This tendency could have even increased after von Wartburg's time. As an effect of this, Occitan of Italy could have become closer to Piedmontese than Romagnol to Tuscan.

The geolinguistic picture assumed in the counter-conjecture a would then be a slightly modified version of the one assumed by von Wartburg, according to whom the border between Gallo-Romance and Italo-Romance ran in his time (first half of the 20th century) across the middle Alpine valleys of Piedmont, in Italian territory. However, if the counter-conjecture a were borne out, such supposed linguistic convergence of Occitan of Italy towards Piedmontese should necessarily correspond to a proportioned linguistic divergence of Occitan of Italy from Occitan of France, if one wants the counter-conjecture a to be reconcilable with both synchronologically grouping Gallo-"Italic" with Italo-Romance on the one hand, and Occitan of France with Gallo-Romance on the other. This divergence should be such that the supposed substantial bundle of isoglosses that would possibly explain the idea of synchronologically grouping present-day Piedmontese (Gallo-"Italic") with Italo-Romance would run today along the Alpine ridge, between the Occitan of France and 'Occitan of Italy' (and this latter, I deduce, would reasonably deserve a new classification/label in von Wartburg's view). As a consequence, this conjectural, modified geolinguistic picture would make a prediction that is a consistently modified version of Prediction 1 (see above). I will define this modified version of Prediction 1 as 'Prediction 1-a', and I will test it too:

PREDICTION 1-*a*. Today intelligibility is higher between geolects 5 and 6 (Romagnol and Tuscan) than between geolects 1 and 2 (Occitan of France and Occitan of Italy).

Testing Predictions 1 and/or 1-*a* is a necessary step. However, von Wartburg (1967) does not only assert that '*Romagnol* became close to Tuscan and *Piedmontese* moved far from Occitan'; rather,

- *i.* he also understands that during the presumed shift from Gallo-Romance towards Italo-Romance, *the entire Po valley plus Romagna area remained linguistically united*, preserving the identity of the Gallo-"Italic" taxon (which is assumed in all the scholarly studies that I am aware of; see Chapters 1, 2, and 3 for some examples);
- *ii.* and, he states that *all of the geolects spoken in the Po valley and in Romagna,* got further from Occitan and closer to Tuscan, forming a new wider "Italian"/Italo-Romance

continuum from the Alps to Sicily (see von Wartburg 1967, Map 10, reported in Figure 3.2).

Therefore, paragraphs *i* and *ii* make a second prediction:

PREDICTION 2. Today (and already in von Wartburg's time) intelligibility *decreases more abruptly* across geolects 1, 2, and 3 in the Alps (namely along the portion of the chain running from Occitan of France, through Occitan of Italy to Piedmontese) than across geolects 4, 5, and 6 in the Apennines (namely along the portion of the chain running from Emilian, through Romagnol to Tuscan).

Testing Predictions 1 (and/or 1-*a*) and 2 would be sufficient to test the post-Wartburg hypothesis given that von Wartburg assumes the entire Po valley as having remained linguistically united with Romagna over the centuries (see paragraph *i* above). Based on this premise, in fact, if Predictions 1/1-*a* and 2 were not borne out, this would implicitly provide evidence that the entire Gallo-"Italic" area has remained united within the Gallo-Romance continuum. However, in order to be as resolutive as possible, I considered it worth testing what is normally stated in the literature (including in von Wartburg, 1967) about the unity of Gallo-"Italic". In order to do so, I considered that, if Gallo-"Italic" remained linguistically united and became more similar to Tuscan than to Occitan, then further predictions, analogous to 1/1-*a* and 2, are made. But while Predictions 1/1-*a* and 2 concern the possible difference between intelligibility across the western Alpine linguistic border and intelligibility across the *Apennines*, these further predictions concern the possible difference between Alpine linguistic border and intelligibility across the western Alpine linguistic border and intelligibility across the yestern Alpine linguistic border and intelligibility across the western Alpine linguistic border and intelligi

- PREDICTION 3. Today (and already in von Wartburg's time) no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility
 - a. is lower

and

b. decreases more abruptly

than across the western Alpine linguistic border.

Please note that, if the results indicated that the previous Predictions 1/1-*a* and 2 are not borne out, showing that between the two mountain ranges under investigation the Apennine range is the one

across which the lowest intelligibility and the most abrupt decrease of intelligibility are found, testing whether the Po valley (with Romagna) remained linguistically united would equate to testing a re-formulated version of Prediction 3, which I will call 'Prediction 3*⁵:

PREDICTION 3*. Today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility

a. is lower

and

b. decreases more abruptly

than across the *Apennines* (not 'across the *western Alpine linguistic border*', as was stated in Prediction 3).

4.1.2.2. THE EXPERIMENTAL HYPOTHESIS OF THE CURRENT STUDY

In Chapter 3 I have argued that von Wartburg did not provide quantitative evidence in favour of his claim, according to which Gallo-"Italic"—described as genealogically Gallo-Romance—became linguistically more similar to Italo-Romance than to its sibling uncontested Gallo-Romance geolects due to contact with Tuscan/Italian. Therefore, in the current study, it is appropriate to consider the pro-Gallo- synchronological profile⁶ of Gallo-"Italic" as the traditional theory that is going to be challenged by a 'new' one. Conversely, the post-Wartburg hypothesis will be considered as the *experimental (or research) hypothesis*, namely the 'new' theory/proposal ('new' despite being formally elaborated by me on the basis of a statement that was put forward by von Wartburg in the first half of the 20th century) that needs to be supported by evidence (i.e. that has

⁵ A clarification is needed regarding the fact that I use, in a seemingly incoherent way, the forms 'Prediction 1<u>-a</u>' and 'Prediction 3<u>*</u>'. This is due to the fact that I want to show the relation between Prediction 1 and Prediction 1-*a* as being conceptually different from the relation between Prediction 3 and Prediction 3*. A consequence of this conceptual difference is that I can (and must) test both Predictions 1 and 1-*a*, but I can (and must) test only one of the following two: Prediction 3 or 3* (in fact, as based on previous test results, they exclude one another). Moreover, the -*a* element in '1-*a*' makes reference to the counter-conjecture *a*, whereas in Prediction 3* I do not make reference to a counter-conjecture.

⁶ For the sake of brevity, I use here and below the expression (*i.*) '*pro-Gallo-* synchronological profile/nature/etc. of Gallo-"Italic" in substitution of the longer (*ii.*) 'linguistic profile/etc. based on which present-day Gallo-"Italic" groups with the other Gallo-Romance varieties in a synchronological classification'. The expression *i.* is preferable to the expression (*iii.*) 'a *Gallo-Romance* synchronological profile/etc.', which would be a reiteration of a practice that I have criticised in Chapter 2, namely the use of a typical genealogical label (Gallo-Romance) for naming a synchronologically identified group (see in Section 2.2.2 the 'inertial use of the nomenclature problem').

'the burden of proof'). The relevance of this clarification will be better appreciated in Section 4.1.5 below.

4.1.2.3. SUMMARY: RESEARCH QUESTIONS AND PREDICTIONS

After having presented the predictions made by the post-Wartburg hypothesis (Section 4.1.2.1), the 'general research question 4' presented in Section 1.8 ('Is present-day Gallo-"Italic" synchronologically grouped with Italo-Romance or with Gallo-Romance?') can now be interpreted in terms of intelligibility rates and re-formulated in a more analytic way in the following twofold form 4a and 4b:

- 4a) In a chain of six localities, running from the French Alps to the Tuscan Apennines, passing through the Po valley and Romagna, which is the pair of localities between whose geolects intelligibility is the lowest?
- *4b)* Which is the sequence of the three adjacent geolects along which intelligibility lowers most abruptly?

If the post-Wartburg hypothesis is true, then the answers to the above twofold research question must be the following:

- 4a^{ans}) In a chain of six localities, running from the French Alps to the Tuscan Apennines, passing through the Po valley and Romagna, the two adjacent localities between which the mutual intelligibility is the lowest are two of the three most western localities of the chain, i.e. Occitan of France and Occitan of Italy, or Occitan of Italy and Piedmontese (Gallo-"Italic").
- 4b^{ans}) The sequence of three adjacent localities along which intelligibility lowers most abruptly is the one going from Occitan of France, through Occitan of Italy, to Piedmontese (Gallo-"Italic").

Interpreted in linguistic terms, statements $4a^{ans}$ and $4b^{ans}$ can be synthesized as follows:

• In the portion of Romania including the French Alps and the Tuscan Apennines, passing through the Po valley and Romagna, the currently most substantial bundle of isoglosses runs along the western Alpine range (along the ridge or along a lower parallel line in Italian administrative territory).

The above statement can in turn be interpreted in a diachronic perspective as follows:

• Given an original situation when Gallo-"Italic" was linguistically more similar to the bordering uncontested Gallo-Romance (sibling) geolects than to the bordering Italo-Romance (second-cousin) geolects, the situation has been reversed over the centuries.

4.1.3. WHICH METHOD FOR TESTING INTELLIGIBILITY?

Over the past few years, scholarly literature dedicated to speech intelligibility increased and new methods were proposed. The scope and the varieties analysed in these more recent studies are various: intelligibility of L2 speech (e.g. Munro & Derwing, 1995; Derwing & Munro, 1997; Munro et al., 2006); intelligibility of Spanish and Portuguese (Jensen, 1989); Frisian, Afrikaans, and Dutch (van Bezooijen & Gooskens, 2005); Scandinavian languages (Gooskens, 2006, 2007a; Moberg et al., 2007; Gooskens et al., 2008); Chinese geolects (Tang & van Heuven, 2007, 2009); German, Low German, and Dutch (Gooskens et al., 2011); Lombard and Italian (Tamburelli, 2014); Bavarian and Standard German (Leonardi, 2016).

In these studies, the investigation of intelligibility is motivated by various general interests: language planning or policy, language contact phenomena, L2 language teaching/learning, audiology, foreign language testing, speech technology, the relationship among accentedness, perceived comprehensibility and intelligibility (e.g. Munro & Derwing, 1995; Derwing & Munro, 1997; Munro et al., 2006). The authors of these studies use various techniques to measure the intelligibility of either written or spoken language: transcription, picture-pointing tasks, word translation, multiple-choice questions, true/false questions and summarization (a more overarching set of methods is presented in Tamburelli, 2021b).

For the aims of the present study, I considered Tang & van Heuven's (2009) method as being of particular utility, where intelligibility testing was used with similar intents to the current ones. Tang & van Heuven (2009: 711) showcase two techniques to measure the degree of intelligibility between geolects: *(1.) functional testing*, "also called the 'test the informant' method by American structuralists (Voegelin & Harris, 1951)", which tests how well the participants "actually understand" the stimuli variety (see also Gooskens, 2013: 5); *(2.) opinion testing*, also known as "judgment testing ('ask the informant' in the American structuralist method)", defined in other literature as "perceived (linguistic) distance" (Gooskens & Heeringa, 2004: 193; Beijering et al.,

2008), which asks the participants to rate the difference between the stimulus variety and their own variety on a continuous scale. Tang & van Heuven (2009) hold that functional testing, especially at the sentence level (see Sections 4.2.2.2 and 4.2.2.2.1), is more effective than opinion testing in matching the classification proposed by traditional dialectologists and comparativists. Moreover, the opinion test does not allow the researcher to assess whether the participants' judgments are influenced by non-linguistic factors (e.g. attitudes, geographical knowledge of the variety in question; see Beijering et al., 2008). A positive attitude might make the listener judge the test variety as more similar to their one than a functional test would reveal; a negative attitude might make them judge the test variety as less similar to their one.

For the current study, I considered it preferable to run functional testing. I will better explain this choice in Sections 4.2.2.2 and 4.2.2.2.1 below (in Aims and method).

4.1.4. CONTROL VARIABLES

In previous research, it has been claimed that, besides linguistic (structural and lexical) distance between the speaker's and the listener's variety (see Gooskens 2007a; Moberg et al., 2007), other variables could also affect intelligibility rate, such as attitudes towards the target variety and towards its speakers, familiarity with the target area and amount of exposure to the target variety, foreign language competence (see more detail on each of these variables in Section 4.2). For instance, it has been claimed that negative attitudes due, for instance, to stereotypical ideas about peoples and their linguistic varieties, may discourage the listener from making an effort in trying to understand the target variety (Wolff, 1959; van Bezooijen, 1994). In this sense, Wei (2007: 9) points out that "mutual intelligibility is not really a relationship between linguistic varieties, but between people, since it is they, and not the linguistic varieties, that understand one another." However, in experimental settings, the correlation between attitude and intelligibility score has often resulted as weak-hence difficult to demonstrate-(Gooskens, 2006, 2007b; van Bezooijen & Gooskens, 2007; Schüppert et al., 2015; Tamburelli, 2014) or as non-significant (Leonardi, 2016). In any case, in order to check the potential effect that attitudes and contact might have on the intelligibility rate, following previous research (see next Section 4.2.2.1 for more detail), I collected data from the participants of the current study eliciting information about their attitudes towards the target varieties and speakers, about the amount of exposure to the target varieties and of familiarity with the target geographical areas, and about their foreign language competence.

Moreover, there is some evidence that female voices tend to be more intelligible than male voices (Bradlow et al., 1996). In order to control for the gender of voice, I planned that for each geolect investigated in the current study, an equal number of stimuli (see also Section 4.2.2.2.4) would be produced by a male and a female voice (but see Sections 4.2.2.2.4 and 6.1.2.2 for an unavoidable limitation in the recruitment of speakers/utterers for the stimuli recording).

There is also some evidence that, in conditions of language shift, females tend to abandon the L language before males (Labov, 1990; see an overview in Romaine, 2008; see also Price & Tamburelli, 2016). In order to control for participants' gender, I planned to select an equal number of male and female participants (see Section 4.2.3.1; but see Sections 4.2.3.2 and 6.1.2.1 for some unavoidable limitations in participants recruitment), and that the different acoustic lists obtained by the Latin square design (see Section 4.2.2.2.6) would be distributed in an even way between male and female participants.

4.1.5. ASYMMETRY IN INTELLIGIBILITY

Research has shown that levels of intelligibility seem to not be necessarily symmetrical (Wolff, 1959): Danes understand Swedes better than Swedes understand Danes (Gooskens, 2007a, Moberg et al., 2007; Gooskens et al., 2010; Gooskens & van Bezooijen, 2013); the Dutch understand German better than Germans understand Dutch (Gooskens et al., 2015); and this asymmetry has also been observed between Czech and Slovak (Budovicová, 1987) and Spanish and Portuguese (Jensen, 1989). Scholars have proposed various explanations, such as different attitudes, different degrees of motivation, asymmetric assessments of prestige, different amount of exposure and familiarity, and pronunciation or speech rate (Wolff, 1959; Gooskens et al., 2010; Gooskens & van Bezooijen, 2013; Gooskens et al., 2015).

As far as the present study is concerned, in Figure 4.1 above, it can be seen that only the intelligibility rate of geolect 5 (Romagnol) to listeners 6 (Tuscan) would be relevant, not the reverse. Indeed, standard Italian is based on Tuscan, and Romagnol people, like the vast majority of present-day Italian citizens, are literate in Italian and are exposed to Italian-speaking media. However, intelligibility testing that aims at providing information on linguistic distance presumes that the listeners have (ideally) no linguistic competence of the target geolect. This could suggest that in that extreme eastern part of the chain (see Figure 4.1) the intelligibility data should be regarded as incomplete with respect to the ones collected in the rest of the chain, where

intelligibility data in both directions are usable (see Section 4.2 Aims and method). However, I argue that the unidirectional data collected across the Apennines are in any case sufficient for the current purposes. Indeed, showing that even just in one direction the intelligibility measure across the Apennines is significantly lower than *one of the two reciprocal* intelligibility measures across the Alpine ridge or across the Occitan-Piedmontese boundary would be sufficient to demonstrate at least that the intelligibility reversal predicted by the post-Wartburg hypothesis did not completely take place. Another consideration supports the idea that the unidirectional data collected across the Apennines are in any case sufficient for the current purposes. This is Hammarström's (2008) stance, according to which the literature does not actually show any "genuine well-documented example" of asymmetrical intelligibility. Rather, "in most (all?) cases [asymmetric intelligibility between A and B speakers occurs] because the A speakers have been exposed to B a lot more, and not purely because of their knowledge of A" (Hammarström, 2008: 35). This position suggests that a possible low intelligibility level of Romagnol to Tuscan listeners would unlikely correspond to a significantly higher intelligibility of the Tuscan geolect to hypothetical monolingual (non-Italian-speaking) Romagnol listeners.

In the next section I will present in detail the method I followed in testing the predictions made by the post-Wartburg hypothesis.

4.2. AIMS AND METHOD

In Section 4.1, I presented the theoretical background provided by previous literature, on the basis of which I could identify some predictions made by the post-Wartburg hypothesis and a method useful for testing them. Testing these predictions will contribute to propose a synchronological classification for present-day Gallo-"Italic". In this section, the method followed in testing the predictions made by the post-Wartburg hypothesis will be presented in detail. Section 4.2 is divided in four parts. Section 4.2.1 introduces the design of the study, with some basic geographical and linguistic information about the localities investigated (i.e. the data points). Section 4.2.2 presents the material, in particular the background questionnaire (Section 4.2.2.1), the stimuli selection and recording (Section 4.2.2.2), and the answer-sheet (Section 4.2.2.3). Section 4.2.3 presents the participants. Section 4.2.4 presents the procedure, in particular as concerns the background questionnaire (Section 4.2.4.2). Finally, Section 4.2.5 returns to the predictions made by the post-Wartburg hypothesis; in particular, Section 4.2.5.1

updates the predictions, now making reference to the actual data points investigated just introduced in Section 4.2.1; Section 4.2.5.2 lists the sequence of statistical tests that will be ran in order to test the predictions.

4.2.1. DESIGN OF THE STUDY

Intelligibility between related geolects can be approached in two ways: by "asking the subjects how well they *think* they understand" the target geolect (opinion testing) or by "*testing* how well subjects *actually* understand" the target geolect (functional testing) (Gooskens, 2013: 5; see also Tang & van Heuven, 2009). In the current study, intelligibility was tested functionally, namely by playing to the participants some recorded sentences spoken in the target geolects, and measuring to what extent the participants "actually understood" the speakers (Gooskens, 2013). For intelligibility functional testing, I used a translated version of the 'Speech Perception in Noise' (SPIN) test (Kalikow et al., 1977; Tang & van Heuven, 2009), which I will present in more detail below. I measured and compared intelligibility between pairs of geolects spoken in localities situated along two chains of six localities each (see Figure 4.2), both running from the Occitan-speaking Alpine valleys in the French administrative territory, to the Tuscan-speaking Apennine valleys in the Italian administrative territory (Po valley and Romagna):

- chain A: localities 1, 2, 3, 4, 5, 6
- chain *B*: localities 7, 8, 9, 10, 11, 12



Figure 4.2. Dots: chain *A* data points; squares: chain *B* data points. The Gallo-"Italic" group is comprised within the thick line. Small crosses: state borders; dashed lines: regional administrative borders.

Intelligibility was investigated independently along each of the two chains of localities, which therefore represent the objects of two independent yet methodologically identical studies.

As we will see in more detail below, in the test, participants of each locality were required to listen to sentences (items) translated and recorded in the geolects spoken in the two adjacent localities in the chain. This means that each locality happened to be both

- a 'participant locality', or what the literature usually refers to as a *data point* (like the present study henceforth), namely a locality where the data—intelligibility scores and questionnaire responses—were collected from the participants; and
- an 'item locality', namely a locality where the sentences were translated into the local geolect and recorded in order to be played as stimuli (or as filler items, see Section 4.2.1.1 below) to the participants of the adjacent localities.⁷

Some basic pieces of information about the 12 data points investigated are listed below. For each data point, I marked the name of the language⁸ of which the geolect spoken there is a local

⁷ As we will see, however, Tuscan localities were only 'participant localities'.

⁸ For more details on these languages and their state of endangerment, see <u>http://www.unesco.org/languages-atlas/index.php</u>.

expression, followed by a hyphen and by the data point number, a long hyphen and the ISO code corresponding to the language, the administrative region in which the data point is situated, and a more precise geographical position within the region.

- Chain A
 - *Occitan-1* oci, PACA⁹ (France), upper Alpine valley;
 - Occitan-2 oci, Piedmont, upper Alpine valley;
 - *Piedmontese-3* pms, Piedmont, Po river plain;
 - *Emilian-4* egl, Emilia-Romagna, lower Apennine valley;
 - *Romagnol-5* rgn, Emilia-Romagna, upper Apennine valley;
 - *Tuscan-6* ita,¹⁰ Tuscany, upper Apennine valley.
- Chain *B*
 - o Occitan-7 oci, PACA (France), upper Alpine valley;
 - o Occitan-8 oci, Piedmont, upper Alpine valley;
 - *Piedmontese-9* pms, Piedmont, Po river plain;
 - Lombard-10 lmo, Lombardy, Po river plain;
 - *Emilian-11* egl, Emilia-Romagna, middle Apennine valley;
 - o *Tuscan-12* ita, Tuscany, upper Apennine valley.

The name of the language followed by the hyphen and by the data point number is how each data point in the current Chapter 4 is always referred to. This was done in order to facilitate the reader recalling the reciprocal positions of the data points in the chain. In order to maintain an easily readable dimension of all data point names in the tables and figures, sometimes the names Piedmontese-3 and Piedmontese-9 were abbreviated into Piedmon.-3 and Piedmon.-9. Similarly, sometimes Romagnol-5 and Lombard-10 were abbreviated into Romagn.-5 and Lomb.-10.

4.2.1.1. STIMULI (EXPERIMENTAL ITEMS) VS. FILLERS (NON-EXPERIMENTAL ITEMS). For the sake of simplicity, the aim of the current study was defined above as *comparing intelligibility between*

⁹ Provence-Alpes-Côte d'Azur, region of France.

¹⁰ Tuscan dialects are grouped below the ISO code *ita*, corresponding to "Italian language". For the sake of clarity, however, in the current study "Tuscan-" will be used as the language name corresponding to the two Tuscan geolects spoken at the two 'eastern' extremities of the chains (i.e. Tuscan-6 and Tuscan-12).

pairs of geolects spoken along two chains of localities (see Sections 4.1.2 and 4.2.1). According to a literal interpretation of this practical definition, 14 of the 28 items that were played to each participant were spoken in the geolect that I will concisely define as 'at west' (i.e. that is spoken in the data point which is situated in the same chain, to the west of the participant's locality), while the other 14 items were spoken in the geolect that I will concisely define as 'at east'. However, looking at Figure 4.2 above it appears that:

- 1. Tuscan-6¹¹ data point was situated at the 'eastern' extremity of the chain,¹² therefore it had only one adjacent geolect (i.e. 'at west'), not two;
- 2. for Romagnol-5 participants, only intelligibility scores on geolect 'at west' had experimental relevance, not scores on geolect 'at east' (Tuscan-6). Indeed, Romagnol speakers, like the vast majority of the Italian citizens of our days, are literate in Italian, which is based on and is also very similar to Tuscan. They are also exposed every day to Italian-speaking media.

Therefore, for these participants (Romagnol-5 and Tuscan-6), a sub-list of 14 *filler* items was added to the 14 *experimental* items (i.e. stimuli), and the items spoken in the second nearest geolect in the chain (i.e. Piedmontese-3 and Emilian-4 respectively) were used as *fillers*.¹³ This was done in order to maintain homogeneous experimental conditions for all the participants in each chain and in the whole study (see "balanced presentation list" and "fatigue effect" in Keating & Jegerski, 2015: 17-18). Moreover,

 for Occitan-2 participants, the intelligibility scores on geolect 'at east' (i.e. Piedmontese-3) had no experimental relevance. This is because Occitan-speaking dwellers of Piedmontese Alps (Occitan-2) are often trilingual (Occitan-*Piedmontese*-Italian), or their parents and/or most people in their village (see Sibille 2012) during their childhood and youth were so.

¹¹ For the sake of simplicity, these bullet points (1 to 4) will only refer to chain A, understanding that identical considerations can be made for chain B.

¹² From a strict geographical standpoint, the Tuscan-6 data point is not to the east of the Romagnol-5 data point (see figure 4.2). However, for the sake of simplicity, I will refer to them as if Tuscan-6 were the data point 'at east' with respect to Romagnol-5, in line with the general trend of the chain: low number= west, high number= east. The same considerations apply to chain *B* data point Tuscan-12.

¹³ This means that the respective data were excluded from the statistical analyses.

In order to maintain homogeneous experimental conditions across all participant groups (Keating & Jegerski, 2015, see above), the 14 Piedmontese-3 spoken items were included as fillers in the acoustic lists played to Occitan-2 participants, besides the 14 stimuli (Occitan-1 spoken items); and, when measuring and comparing intelligibility across the Occitan-Piedmontese border,

 the unusable Occitan-2 (trilingual) participants' intelligibility scores on Piedmontese-3 geolect (see bullet point 3 above) were replaced with the Occitan-1 participants' intelligibility scores on Piedmontese-3 geolect.

As a result, taking chain *A* as an example,¹⁴ intelligibility scores between the following pairs of data points were collected in both directions and entered into the statistical analyses: Occitan-1/Occitan-2, Piedmontese-3/Emilian-4, Emilian-4/Romagnol-5;¹⁵ only Tuscan-6 participants' intelligibility score on the Romagnol-5 geolect was collected, not the reverse; only Piedmontese-3 participants' intelligibility score on the Occitan-2 geolect was entered into the statistical analyses, not the reverse; in the analyses, the unusable Occitan-2 (trilingual) participants' intelligibility scores on the Piedmontese-3 geolect were replaced by Occitan-1 participants' scores on the Piedmontese-3 geolect.

No set of items (i.e. sentences) was used exclusively as fillers in the study: for instance, the items spoken in the Emilian-4 geolect were played as fillers to Tuscan-6 participants but as stimuli to Piedmontese-3 and Romagnol-5 participants.

In the next sections of Chapter 4, I will use the term *items* in order to generically refer to the sentences played to the participants, in passages where it is not relevant to specify whether they are used as stimuli or as fillers.

After a finer-grained presentation of the items, Table 4.3 in Section 4.2.2.2.6 will summarize which sets of items were used as stimuli and which as fillers for each participants' group.

4.2.1.2. REASONS FOR RUNNING THE STUDY ACROSS TWO CHAINS. The study involved testing two independent chains of data points (chain A and chain B), both formed by a sequence of one Occitan of France, one Occitan of Italy, three Gallo-"Italic", and one Tuscan data points. I decided to do so

¹⁴ The same applies, *mutatis mutandis*, to chain *B*.

¹⁵ If one defines "[m]utual intelligibility... as the average (mean) of the intelligibility of speaker A for listener B and vice versa (Cheng, 1997)" (Tang & van Heuven, 2009: 710), then *mutual* intelligibility between these pairs of geolects can be measured. However, see Hammarström, 2008, reported in Section 4.1.5, for some considerations on the *alleged* asymmetry in mutual intelligibility.

because data about two chains would have offered a broader picture of intelligibility within the area of interest than what data about one single chain would have done. Indeed, investigating just one chain could have left some logically possible doubts-albeit difficult to justify from the dialectological standpoint—about the representativeness of such a thin stripe of territory for the entire area of interest. Instead, it was assumed that a possible parallelism in the sequence of the scores measured along two chains of data points, in addition to the scholarly qualitative descriptions of the linguistic similarities among and within the dialect areas crossed by the two chains, would have suggested that some similar sequences of scores could be plausibly found in other possible similar chains of localities, having a similar direction and a similar distribution among the linguistic areas of interest. On this premise, if the results of chain A and chain B studies reveal such parallelism, the choice of investigating two similar chains of data points instead of one will have therefore increased the geographical representativeness of the data of each chain. A second advantage of investigating two chains is that it made it possible to measure both Piedmontese-Emilian (mutual) intelligibility (in chain A) and Piedmontese-Lombard (and consequently also Lombard–Emilian) (mutual) intelligibility (in chain B), adding some pieces of information to the general picture of the study. Indeed, given the reciprocal geographical position of the Piedmontese, Lombard, and Emilian linguistic areas (see Figure 4.3 below), a single chain design would have entailed renouncing one (or two) of the abovementioned measurements.

4.2.1.3. REASONS FOR INTERSECTING THE CHAINS. The two chains intersect in two points (they broadly run towards the same direction but they are not parallel, see Figure 4.3 below). I chose this design in order to avoid what could be called the 'two-belts-continua interpretation'. Two non-intersecting chains of data points would have indeed left room for the logically possible interpretation of the results as if they concerned distinct and bordering geolect continua, each developing along each of the two chains. It could be consequently argued that a possible parallelism in the sequence of intelligibility scores collected in the two non-intersecting chains (i.e. the way in which scores increase and decrease along each pair of data points in the chain) does not exclude the possibility that the two chains run along two distinct continua that are lowly intelligible or even unintelligible to one another. Certainly, such an interpretation would be in contrast with the dialect studies that I am aware of, which do not suggest such a 'two-belts' linguistic subgrouping, and describe instead the geolects spoken in Italy as clustering broadly around regional cores (Piedmontese, Lombard, Emilian, Romagnol, Tuscan, etc.) (see Ascoli 1882-1885; Devoto &

Giacomelli 1972; Hall 1974; Pellegrini 1977; Maiden & Parry 1997, Loporcaro 2009). However, in order for the results of the current study to be as exhaustive and resolutive as possible, I preferred to preserve the design of the study even from the mere logical possibility of the two-belts-continua interpretation. In fact, intersecting the two chains (see Figure 4.3 below), a possible parallelism between the sequences of intelligibility scores collected in each chain, combined with possible high levels of intelligibility between at least the Gallo-"Italic" pairs of data points in each chain, could no longer be interpreted as a fortuitous resemblance between two distinct and potentially reciprocally unintelligible continua. Rather, it could only be interpreted as a general trend shown by two data point chains that are necessarily representative of the same (smooth) continuum. This means that, intersecting the chains, the study of each chain will be more informative than what the study of each of the two non-intersecting chains would be, allowing a unitary interpretation of the data collected for the two chains.



Figure 4.3 (repeated from Figure 4.2 for convenience). Dots: chain *A* data points; squares: chain *B* data points. The Gallo-"Italic" group is comprised within the thick line. Small crosses: state borders; dashed lines: regional administrative borders.

As we will see in more detail in Section 4.2.2.2, in the present study, data on intelligibility were collected by playing a list of 28 items to each participant, 14 spoken in the geolect 'at west', 14 in the geolect 'at east'. For each of the two geolects, 7 items were spoken by a male native speaker and 7 by a female native speaker. Participants from localities situated in the Italian state were required to write down the final word (target word) of each sentence (item) in Italian, while

participants from localities situated in the French state were required to write it down in French. A correct translation of each target word generated a score of 1 point, while an incorrect translation and a blank response generated a score of 0 points. The percentage of target words correctly translated by the participant represented the level of intelligibility of the geolect for the participant. Before playing the 28 items to the participant, two practice items were played to him/her. This was done in order for the participant to practice the task "so that any possible initial transient in performance due to lack of orientation to the test situation was presumably minimized" (Kalikow et al., 1977; see "task familiarity effect" in Keating & Jegerski 2015: 17).

In order to prevent priming effects (see Morton, 1969; Cutler & van Donselaar, 2001; see also Tang & van Heuven, 2009), each of the 28 items was played only once to the participant.

The participant was not informed about the number (i.e. two) nor about the identity of the geolects involved in the test.

4.2.1.4. DIVERGENCES BETWEEN 'ITEM LOCALITY' AND 'PARTICIPANT LOCALITY'. In three cases out of twelve (two in chain A, one in chain B), the locality where the sentences were translated and recorded ('item locality') did not exactly coincide with the locality where the intelligibility data were collected ('participant locality'). For Occitan-2 data point, the item locality was Pradzalà/Pragelato (upper Cluson/Chisone valley), while the participant' locality was Chaumount/Chiomonte (upper Susa valley). This is due to the fact that, after recording the sentences in Pradzalà, I was no longer able to get positive feedback from the local people whom I had got in touch with and whom I tried to involve in the role of 'contact person/people', namely with the mission of contacting and recruiting the possible participants. It should be noted that contact people were necessary in the current study: they should recruit the considerable number of 24-30 participants, under selective research conditions (see 'selection criteria' in Section 4.2.3.1 below) and in quite small localities, situated at a distance of 158 to 393 km from where I live. For similar reasons, the item locality for Romagnol-5 data point was Marchèt/Mercato Saraceno (middle Savio Valley), while the participant locality was Sêrsna/Sarsina, situated in the same valley, 8 km distance from Marchèt in the direction of the Apennine ridge (6 km as the crow flies). Different reasons explain why the item locality for Lombard-10 data point was Pioltell/Pioltello, while the participant localities¹⁶ were Cernusc/Cernusco sul Naviglio, Gorgonzœla/Gorgonzola and Pessan/Pessano. Indeed, I am familiar with these localities, which are close to each other (Pioltell and Pessan, which are the reciprocally further localities, are 7 km distant from one another as the crow flies, 9 km by road), and whose administrative territories border with each other. For personal convenience, I preferred to recruit participants by word of mouth in various associations, trusting my own knowledge of the high linguistic-as well as historical-administrative and cultural-homogeneity of the area where all these four localities are situated (Martesana zone, eastern province of Milan). As far as Pradzalà and Chaumount are concerned, both these localities are situated in the so-called "Valli Delfinali" (Sibille, 2014: 1) and share most administrative and linguistic history. The linguistic homogeneity of this restricted area is recognised in the scholarly literature, which ascribes both Pradzalà and Chaumount geolects to the "Vivaro-Alpine" group of Occitan, along with the geolects spoken in the area of Briancon, in France (Sibille, 2014: 4). A finer-grained scholarly classification ascribes both Pradzalà and Chaumount geolects to the "Northern Cisalpine group of Occitan spoken in Piedmontese Alps", in contrast with the "Valdese" group, spoken in the middle parts of the same valleys, and the "Southern Cisalpine" group, spoken in the southern Piedmontese Alps (Sibille, 2014: 2). In the current study, such a tight classificatory partnership of the two geolects was considered as a sufficient condition allowing the substitution of Pradzalà participants with Chaumount participants, despite some obvious differences between the two localities' geolects.

In summary, Tables 4.1 and 4.2 provide the item localities and the participant localities for each data point of chain *A* and chain *B*, respectively.

¹⁶ Note that, unlike the other data points, in the Lombard-10 data point, the participants' localities were multiple, with the data being collected from three localities.

	Item locality	Participant locality
Occitan-1	Lë Viärà / Villar-Saint-Pancrace (F)	Lë Viärà / Villar-Saint-Pancrace (F)
Occitan-2	Pradzalà / Pragelato (TO)	Chaumount / Chiomonte (TO)
Piedmontese-3	Vigon / Vigone (TO)	Vigon / Vigone (TO)
Emilian-4	Varan / Varano de' Melegari (PR)	Varan / Varano de' Melegari (PR)
Romagnol-5	Marchèt / Mercato Saraceno (FC)	Sêrsna / Sarsina (FC)
Tuscan-6	-	Poppi (AR)

Table 4.1. Chain A: 'item locality' (locality where the sentences were translated and recorded) and 'participant locality' (locality where the intelligibility data were collected) for each data point investigated.

	Item locality	Participant locality/-ies
Occitan-7	Barcilona / Barcelonnette (F)	Barcilona / Barcelonnette (F)
Occitan-8	Vinai / Vinadio (CN)	Vinai / Vinadio (CN)
Piedmontese-9	Vila Falèt / Villafalletto (CN)	Vila Falèt / Villafalletto (CN)
Lombard-10	Pioltell / Pioltello (MI)	Cernusc, Gorgonzœla, Pessan (MI)
Emilian-11	Pavoll / Pavullo nel Frignano (MO)	Pavoll / Pavullo nel Frignano (MO)
Tuscan-12	-	Piteglio (PT)

Table 4.2. Chain B: 'item locality' and 'participant locality/-ies' for each data point investigated.

Based on previous scholarly studies, the geolect spoken in each locality presented above can be considered representative of a sub-group of a smooth 'dialect continuum' clustering broadly around a regional core (each of these 'dialect continua' is defined as a *language of Italy* in the UNESCO Atlas of the World's Languages in Danger (2010) and in several recent scholarly studies¹⁷). In particular, all four Occitan geolects involved in the research (in chains *A* and *B*) are ascribed to the Vivaro-Alpine sub-group of Occitan, both Piedmontese geolects (chains *A* and *B*) are ascribed to the *Alto Piemontese* sub-group of Piedmontese (Gallo-"Italic") (see Allasino et al. 2007, Figure 2.1), both Emilian geolects (chains *A* and *B*) are ascribed to the western sub-group of Lombard (Gallo-"Italic"), all Lombard geolects (chain *B*) are ascribed to the western sub-group of Lombard (Gallo-"Italic"), the Marchèt and Sêrsna geolects (chain *A*) are both ascribed to Romagnol

¹⁷ In Ethnologue and Glottolog, too. See an overview in Tamburelli & Tosco 2021.

(considered by some scholars as a sub-group of the Emilian-Romagnol group, Gallo-"Italic"), the Poppi geolect (chain *A*) is ascribed to the Casentinese sub-group of Tuscan, and the Piteglio geolect (chain *B*) is ascribed to the Pistoiese sub-group of Tuscan (see Ascoli 1882-1885; Devoto & Giacomelli 1972; Hall 1974; Pellegrini 1977; Maiden & Parry 1997; Loporcaro 2009; Sibille 2014).¹⁸ This short and broad dialectological introduction only intends to show the following: (*1.*) the localities investigated in the current study do not represent any sort of 'linguistic islands', and can therefore be considered as fully representative of the Occitan or of the Gallo-"Italic" or of the Tuscan continuum; and (*2.*) in the three data points where item locality and participant locality do not coincide, these two (or more) localities are dialectologically very close to one another, both belonging to the same sub-group of the same dialect continuum (i.e. to the same sub-group of the same regional language).

4.2.2. MATERIAL

Section 4.2.2.1 presents the background questionnaire, Section 4.2.2.2 presents the items (i.e. the sentences played to the participants), and finally, Section 4.2.2.3 presents the answer sheet.

4.2.2.1. BACKGROUND QUESTIONNAIRE

By means of a questionnaire (see Appendices 2a and 2b), information was collected about the participants' age, gender, and place of residence (*question 10*). Information was also collected about the current participants' language usage at home (*question 3*) and language usage during childhood (*question 4*). This information served to verify whether the participants met the prerequisite selection criteria (see Section 4.2.3.1 below).

In order to check their potential effect on the intelligibility score, information was also collected from participants about some variables that, according to previous research (see Section 4.1.4), could affect the intelligibility score, besides the linguistic distance between the participants' native geolect and the target geolect. These variables are the following.

¹⁸ UNESCO lists Emilian and Romagnol as two distinct languages, with the ISO 639-3 codes egl and rgn respectively. In the current study, this UNESCO distinction will be assumed.

4.2.2.1.1. FOREIGN LANGUAGE AND LATIN LANGUAGE COMPETENCE. Previous research has found evidence that "multilinguals have an advantage... for comprehension of a language" (Gooskens & Heeringa 2014: 249; see Cenoz 2003; Cenoz, Hufeisen & Jessner 2001; Council of Europe 2001); moreover, any foreign language competence (e.g. English, Spanish, Latin) might facilitate the understanding of words of the target geolect that are (so-called)¹⁹ "cognates" of words of the known foreign language (Gooskens, 2007a: 446, 461, 464). Therefore, by means of

• *question 1*, the participant was asked about his/her foreign language competence. S/he was required to report three possibly known foreign languages, in descending order of competence, with the respective level of competence chosen on a five-point rating scale: 'no competence'=0, 'school level'=1, 'elementary level'=2, 'intermediate level'=3, and 'advanced level'=4.

Then, by means of

• *question 2*, the participant was asked to report the level of his/her Latin language competence choosing on a four-point rating scale: 'no language competence'=0, 'basic level'=1, 'good level'=2, 'very good level'=3.

4.2.2.1.2. CONTACT WITH TARGET AREAS AND EXPOSURE TO TARGET LANGUAGES. Previous literature argues that contact with the target area and exposure to the target language may improve intelligibility on the test (e.g., Gooskens, 2006; Moberg et al., 2007). Therefore, by means of

question 5, the participant was asked about his/her contact with the target areas. S/he was asked to fill in a 4-point rating scale of how often s/he had been to each of the target areas, namely the geographical regions where the target languages are spoken: 'never/rarely'=1, 'sometimes'=2, 'often'=3 and 'very often'=4.

Then, by means of

¹⁹ In historical linguistics, "cognates" seems to have a stricter meaning than in the mutual intelligibility literature that is cited in the current study. In historical linguistics, two cognate words (present in two languages) are by definition both *inherited* from a common ancestor language. In the mutual intelligibility literature currently cited, "cognates" seems to have a broader meaning, namely 'co-etymologic words, which share some phonetic material and semantic traits, regardless of whether they were both *inherited* from a common ancestor language, or *borrowed* by one or both of the two languages'.

question 6, the participant was asked about his/her exposure to the target languages, namely the languages of which the target geolects are local expressions. S/he was asked to fill in a 4-point scale of how often s/he deals or has dealt with people who speak/spoke a local geolect of the target languages: 'never/rarely'=1, 'sometimes'=2, 'often'=3 and 'very often'=4.

4.2.2.1.3. ATTITUDE. It has also been claimed that positive attitudes towards target languages and towards their speakers may encourage participants to try to understand the stimuli sentences, while negative attitudes should discourage them from making such an effort (Gooskens, 2006, 2007b), causing false negatives in the intelligibility test (Wolff 1959; see also Spolsky 1969; Svanes 1988). More recent research on word recognition, however, casts doubts on the relevance of attitudes to intelligibility score, providing some evidence that "there is no link between a participant's attitude and his or her word recognition abilities." (Schüppert & Gooskens, 2011: 135; also van Bezooijen & Gooskens 2005). In order to check the potential effect of these variables, I asked the participants the following questions:

- *questions 7, 8, and 9;*
 - in *question* 7 they had to indicate, on a 5-point scale, whether they would like to live in the target areas (1='not at all', 5='very likely');
 - in *question 8* they had to indicate how ugly or beautiful they thought the target languages were (1='horrible', 5='very beautiful');
 - in *question 9* I addressed the behavioural component of language attitude (see Schoel et al., 2013), therefore I asked the participants to agree or disagree on a 5-point Likert-type scale whether they would like to speak a (not specified) local geolect of each target language (1='strongly disagree', 5='strongly agree').

In order to preserve the participant's naivety at the moment of the upcoming intelligibility test, in questions 5 to 9—which were about contact, language exposure, and attitude—I used some distractors, asking participants to rate other Italian or French (according to the data point) regions and languages. The overall ratio was of one target question per every three (in total two target questions and four distractors. See Appendices 2a and 2b).

The participants were required to answer each question.

The potential effect of each control variable on intelligibility score was then statistically checked in Section 4.3.*A*.4.6 for chain *A* and Section 4.3.*B*.4.6 for chain *B*. The questionnaire was a variation of the one used by Tamburelli (2014).

4.2.2.2. STIMULI

The level of intelligibility was measured by means of the 'SPIN' test ('Speech Perception in Noise'), developed by Kalikow, Stevens & Elliott (1977). The SPIN test is a *functional test* (see Tang & van Heuven, 2009), meaning that, in contrast to *opinion tests*, where participants are asked how well they "*think* they understand" the target geolect, it measures how well the participants "*actually* understand" the target geolect (Gooskens, 2013: 5). As indicated by Kalikow et al. (1977), this method is potentially useful in several applications, for instance in the assessment of speech reception in the hearing impaired. More recently, the SPIN test was used to measure intelligibility between Chinese, Dutch, and American speakers of English (Wang, 2007), between Sinitic geolects (Tang, 2009; Tang & van Heuven, 2009),²⁰ between Lombard and Italian (Tamburelli, 2014), and between Bavarian and Standard German (Leonardi, 2016).

In the SPIN test, the participant is asked to listen to some short sentences spoken in the target geolect(s), and to write down the final word (target word) of each sentence. Kalikow et al. (1977) provides a list of 200 English sentences with a highly predictable target word (henceforth high-predictability sentences) and a list of 200 English sentences with a lowly predictable target word. High-predictability sentences provide the listener with semantic, syntactic, and prosodic cues, helping him/her in identifying the meaning of the target word (Kalikow et al., 1977; Wang, 2007). Therefore, "this test addresses the efficient interaction of bottom-up (information from the speech signal) and top-down (expectations derived from earlier context) processes in continuous speech recognition" (Tang & van Heuven, 2009: 714). Here is one of the high-predictability sentences that were taken from Kalikov et al. (1977) and used in the current test; the target word was underlined:

1. Spread some butter on your <u>bread</u>.

²⁰ In these studies, what I defined as 'Sinitic geolects' are defined—depending on the study and/or the passage—as "Chinese dialects" or "Sinitic languages" or "Sinitic (language) varieties".

Here is instead an example of a low-predictability sentence, also included in the original list of Kalikow et al. (1977):

2. He could discuss the bread.

In the case of sentence 1., the intelligibility of all or some of the initial words of the sentence (the preceding context) helps the participant to grasp the meaning of the last word, or even to guess it, in the case that s/he failed in recognizing it (see Schotter et al. 2014, and other references there). The same cannot be said for sentence 2., since one could discuss (too) many different things. Therefore, a SPIN test ran with high-predictability sentences focuses on the intelligibility of the entire sentence, rather than of the sole final word. As Tang & van Heuven (2009: 714) report, "[e]arlier work has shown that this type of test is highly sensitive to differences in intelligibility due to different language backgrounds of speakers and listeners (Wang, 2007)". Given the aim of the present study, namely comparing the overall intelligibility between related geolects, this characteristic made high-predictability sentences appear more appropriate for the test. In fact, in the case that all the first four words of the low-predictability sentence 2 reported above were perfectly intelligible to a participant, but not the unpredictable last (target) word, the resulting 0 score would not properly represent the real overall level of intelligibility, but rather only the level of the participant's lexical competence, even limited to the last word of the sentence. Instead, in the case of the high-predictability sentence *1*, the intelligibility of the last word could result for each of the following reasons: (a.) the intelligibility of the context (precedent words) helps the participant to 'guess' the unintelligible target word; or (b.) to 'grasp' the not perfectly intelligible target word; or (c.) the target word is intelligible regardless of the unintelligibility of the context. Therefore, through using high-predictability sentences, the test measures intelligibility due to all the above reasons, all of which actually allow successful communication in real communicative situations (see Miller et al. 1951 and Miller 1962 cited in Kalikov et al. 1977; Valentini-Botinhao & Wester, 2014; Tang & van Heuven, 2009).

In the present study, a list of 28 high-predictability English sentences (henceforth 'sentence meanings') were selected among the original list of Kalikow at al. (1977), and then translated and recorded into the 10 non-Tuscan geolects under investigation. In each of the 12 data points, 14 recorded sentences (items) spoken in each of the two target geolects ('at west' and 'at east' in the chain) were played to each participant; 7 were spoken by the male voice and 7 by the female voice.

Section 4.2.2.2.6 provides the complete list of the sentence meanings²¹ used in the present study. As a sample, Appendix 4 provides the translations of the sentence meanings into the Lombard-10 target geolect (in phonetic transcription).

4.2.2.2.1. REASONS FOR CHOOSING THE SPIN TEST

Besides the SPIN test, several other methods have been used to measure the level of intelligibility between related language varieties: summarization, multiple-choice questions, picture selection, true/false questions, and translation of single words. For the current study, I chose the SPIN test for the following reasons:

- The SPIN test employs short sentences. Short sentences reduce the risk of the saturation of short-term memory (see Gooskens et al., 2008; Gooskens, 2013) thereby minimising nuisance variability due to difference in participants' memory skills. The 28 Lombard translations of the sentence meanings used in the current study, for example, comprised 8.29 words on average (6.64 in the original English version);
- 2. Functional intelligibility measures at sentence level (SPIN test) better reflect classifications proposed by comparativists/dialectologists
 - a. than functional intelligibility measures at word level (isolated word-recognition) obtained by a semantic categorization task;
 - b. and than opinion scores (Tang & van Heuven, 2009).
- 3. The results of a functional test at sentence level have greater ecological validity than the results of functional tests at word level. These latter methods employ isolated words out of context, which are the exception in natural language use (Tang & van Heuven, 2009);
- The SPIN test "is a more realistic task than, for instance, semantically unpredictable sentences... in which all the words [of the sentence] are chosen to be semantically unpredictable." (Valentini-Botinhao & Wester, 2014: 2063);
- 5. The large number of sentence meanings proposed in Kalikow et al. (1977) allowed for the stimuli to be as consistent as possible. Indeed, after translating 64 sentence meanings into

²¹ In the current study, the expression 'list of the sentence meanings' was considered preferable to the expression 'list of the sentences' for similar reasons to the ones presented in McMahon & McMahon (2005: 29, 34). There the authors suggest that the expression "meaning list" is preferable to the expression "word list", which is "potentially ambiguous".

the 10 target geolects, it was possible to select a final set of 28 homogeneously long highpredictability sentences for each target geolect, ending with a mono- or disyllabic noun (see Section 4.2.2.2.5 below).

4.2.2.2.2. NUMBER OF STIMULI

For the current study, I judged the number of 28 stimulus sentences as being sufficient to provide an accurate picture of the intelligibility between the geolects investigated. Indeed, as Leonardi (2016) shows—providing examples from the scholarly literature—in various psycholinguistic studies an even smaller number of stimuli (between 16 and 20) has been considered an accurate clinical marker (Dollaghan & Campbell, 1998; Girbau, 2016; Dillon et al., 2004; Casserly & Pisoni, 2013; more details are in Leonardi 2016).

Furthermore, in previous studies where a SPIN test was used to measure distance between related geolects, a number of stimulus sentences smaller than 28 was considered appropriate: Tamburelli (2014) used 18 high-predictability stimulus sentences; Leonardi (2016) used 18 high-predictability stimulus sentences too.²² On the basis of this premise, two considerations suggested not to use *more* than 28 stimulus sentences:

- During a pilot study (see Section 4.2.2.2.6 below), the average time necessary to complete one individual session turned out to be about 25-30 minutes (questionnaire plus 2 practice items plus 28 stimuli). I considered that longer sessions would have been unnecessarily stressful for elderly participants and too demanding for the contact people and the host associations in terms of logistics;
- 2. After I eliminated the 'inadequate' translations from the list of stimuli, the number of 28 stimuli was a little more than the highest available (for a definition of 'inadequate translations' see below Section 4.2.2.2.5).

²² Actually, in the current study, each participant was played 14 sentence stimuli spoken in each target geolect. However, the use of four acoustic lists obtained by a four-level Latin square design (see Section 4.2.2.2.6) allowed for the playing of 28 stimuli spoken in each target geolect to the participants' group as a whole.

$4.2.2.2.3. \ Stimuli - First \ selection \ \ and \ translation$

The 28 stimulus sentences employed in the present study were selected as follows. As a first step, 64 sentence meanings (i.e. English high-predictability sentences reported in Kalikow et al. 1977) were translated into the 10 non-Tuscan geolects of interest (i.e. 5 target geolects for each chain). I chose these 64 sentence meanings for their applicability to the Occitan, Padanian,²³ and Tuscan common linguistic and cultural context; for instance, I excluded sentences referring to the marine and sailor milieu. The sentences were translated by some native speakers of each geolect (translators), self-reporting and/or reported by the community as endowed with good linguistic competence and practice of their own local geolect.

4.2.2.2.4. STIMULI – RECORDINGS

There is some evidence that female voices tend to be more intelligible than male voices (Bradlow et al., 1996). In order to control for gender of voice, for each geolect investigated an equal number of stimuli should have ideally been produced by a male and a female voice. Therefore, in 9 localities out of 10, the entire list of 64 translated sentences were recorded by both a male and a female native speaker. In most cases, the translator was also one of the speakers who produced/recorded the stimuli. In the Occitan-1 locality (France), no female native speakers were available, so two male native speakers were recorded. In the Occitan-7 locality (France), the male speaker—who was also the translator—and the female speaker were L2 speakers (they did not define themselves as 'native speakers'), erudite activists of the regional language and of its local varieties. However, they were reported by other older speakers as endowed with good active competence and practice of the local geolect. The advanced state of language shift in the area (a French region), the consequent scarcity of native speakers, their old age, and the likely decrease of their everyday linguistic practice during the last decades suggested that these two younger erudite activists, despite not being definable as 'native speakers', could help as translators and utterers in the most appropriate possible way. During the experiment period, I had the opportunity to listen to the translator speaking his local geolect in an apparently fluent way with several older participants and other people (and his fluency and linguistic accuracy were confirmed to me by these latter).

²³ Relating to the Po valley.

As an additional advantage of having involved these two speakers as translators and utterers of the stimuli is the fact that they allowed me to include two further older (native) speakers²⁴ in the list of 24 participants, which risked—and actually revealed itself—to be difficult to complete.

The sentences were uttered at a natural speed, loudness, and intonation, with no breaks between the words. In order to ensure the possibility of choosing the best specimen among various utterances, I required the speakers to utter each sentence more than one time during the recording. In order to ensure the absence of background noise as much as possible, the recordings took place in quiet spaces chosen in agreement with the speakers. I used a digital voice Dictaphone ZOOM H2 Handy Recorder, which produces high-quality WAV files.

4.2.2.2.5. STIMULI – FINAL SELECTION

28 sentence meanings were selected out of the 64 that were translated and recorded in order to use their translations/recordings as stimuli. These 28 sentence meanings were selected from the ones whose translations ended in a *mono-* or *disyllabic* noun (target word) in all 10 target geolects. This was done because previous research has shown that word length has an effect on word recognition (Wiener & Miller, 1946; Scharpff & van Heuven, 1988; see also Kürschner et al., 2008). Indeed, longer words are better recognized because they have fewer 'neighbours' than shorter words (Vitevitch & Rodriguez, 2005), where 'neighbours' are competing word forms that share phonetic material with the stimulus word (Kürschner et al., 2008). Actually, all the original English versions of the SPIN test sentences ended with a *monosyllabic* noun (Kalikow et al., 1977). However, only a part of the 64 sentence meanings submitted to the translated. This fact led me to also include sentences ending—in the translated versions—with disyllabic words.

The choice of translating and recording 64 sentence meanings, while only 28 were needed for the test, is motivated on the basis of the following premises:

1. the 28 stimuli should be, as far as possible, the translations of the same 28 sentence meanings, for all the 10 target geolects;

²⁴ Two older native speakers could not have been included in the list of participants if I had already involved them as translators and/or utterers of the stimuli.

2. It was prudent to expect that some translators would have proposed an inadequate translation or no translation at all for some sentences. For instance, some translators could think that a mono- or disyllabic translation of the target word does not exist in their geolect; some translators could think that for some (target) words no translation at all is possible in their geolect; some translations could have made some target words no longer highly predictable; some translators could have provided an incorrect translation that I could not recognise at the moment of translating or recording.

The concomitance of premises 1 and 2 could have drastically reduced the number of sentence meanings available for all the data points. Therefore, an initial list of 64 sentence meanings seemed to provide—and actually did provide—a reasonably wide margin.

In the end, I selected a list of 28 sentence meanings that happened to be translated into sentences ending with a mono- or disyllabic noun, in *almost* all the 10 target geolects. For each target geolect, the entire list was recorded by a native male speaker, and the same was done by a native female speaker. For the sake of simplicity, in what follows in the current section, these 28 sentence meanings will be called 'canonical', meaning that they are the same in (almost) all the 10 target geolects. However, there were three exceptions (which explain the need of defining the nonexceptions as 'canonical'): for Romagnol-5 and Occitan-7 target geolects, respectively one and two inadequate translations of canonical sentence meanings were replaced with adequate translations of other three 'non-canonical' sentence meanings. These latter were taken from the 36 translated sentences that originally resulted excluded from the list of the canonical ones. I preferred this solution to the alternative option of eliminating the three sentences from the acoustic lists of all the data points because it allowed me to use the highest possible number of canonical sentences at my disposal (i.e. 28) which is, at the same time, a multiple of the number (i.e. 4) of conditions (or Latin square levels) (Keating & Jegerski 2015). I did so on the assumption that each replacing noncanonical sentence was approximatively as intelligible as the replaced canonical one. This assumption was based on the opinion of some native speakers (e.g. the translators), and corroborated by local geolect dictionaries. For instance, one of the two inadequate translations proposed by the Occitan-7 translator—ending by the tri-syllabic word [ma'kena] (bruise)—was replaced with a non-canonical sentence ending with the disyllabic word ['twisa] (hedge). This was decided after the translation/recording session with the Occitan-8 translators, during which these latter confirmed that both words were unfamiliar to them. Actually, ['twisa] shows up in the dictionary of the Occitan-8 geolect at my disposal (Associazione Espaci Occitan, 2008). However, I gave priority to the Occitan-8 translators' opinion. Indeed, ['twisa] resulted as being intelligible to only 3 participants out of 12. For the other inadequate translation proposed by the Occitan-7 translator, I followed the same procedure. In this case, however, the inadequate four-syllabic last word [garga'mɛla] (throat) was familiar to the Occitan-8 translators. Therefore, the inadequate canonical sentence was replaced with a non-canonical sentence ending with the disyllabic word ['pata] (mop), which was familiar to the Occitan-8 translators too. Both the words were reported in the Occitan-8 geolect dictionary.

The raw file of each stimulus was edited: the volume was 'normalized' in order to homogenise the loudness of the two speakers (male and female) and of the speakers of the entire study; the utterance was 'cleaned' from possible distracting environmental noises accidentally recorded just before and after it.

4.2.2.2.6. STIMULI – ACOUSTIC LISTS

In order to explain how the stimuli were distributed among the participants, it is necessary that I recall some aspects—already presented in Section 4.2.1—of the rather complex design of the current study. Each participant was asked to listen to 14 items (sentences) spoken in each of the adjacent geolects in the chain, 'at west' and 'at east'. However, we have seen (Section 4.2.1.1) the following:

- 1. The Tuscan-6 and Tuscan-12 data points were situated at the extremities of their respective chains, therefore they had only one adjacent geolect each (i.e. 'at west'), not two;
- 2. for Romagnol-5 and Emilian-11 participants, only the geolect 'at west' had experimental relevance, not the geolect 'at east' (i.e. Tuscan).

For the participants of these data points, a sub-list of 14 filler items was added to the 14 stimuli, and the items spoken in the second nearest geolect in the chain were used as fillers. We have also seen that:

for Occitan-2 and Occitan-8 trilingual participants, the geolect 'at their east' (Piedmontese-3 and Piedmontese-9 respectively) had no experimental relevance.

The items spoken in the Piedmontese-3 and Piedmontese-9 geolects were included as fillers in the acoustic lists played respectively to the Occitan-2 and Occitan-8 participants. Furthermore, 4. data points Occitan-1 and Occitan-7 were situated at the 'western' extremities of their respective chains, therefore they had only one adjacent geolect each (i.e. 'at east'), not two. For the participants of these data points the items produced in the Piedmontese-3 and Piedmontese-9 geolects respectively were included in the acoustic lists as stimuli. In the statistical analyses, these intelligibility data were used instead of the unusable intelligibility data obtained by the *trilingual* Occitan participants of Italy (Occitan-2 and Occitan-8) on the Piedmontese items (see bullet point 3 above).

As a result, Table 4.3. below summarises what item sets were played to the participants of each data point as stimuli and possibly as fillers. The stimuli are in a regular font; the fillers are in italic. As an example, read the first row of chain A as follows: 'Occitan-1 participants were played 14 stimuli spoken in Piedmontese-3 geolect, and 14 stimuli spoken in Occitan-2 geolect'. Then, read the fifth row of chain A as follows: 'Romagnol-5 participants were played 14 stimuli spoken in Emilian-4 geolect, and 14 fillers spoken in Piedmontese-3 geolect'.

It can be seen that in Table 4.3—like in all the next tables and figures—I generalized the use of the expressions 'items *at west*' and 'items *at east*'²⁵ also in the few cases (three per chain) in which these expressions do not actually correspond to the reciprocal geographical position that they literally mean (this explains why, throughout the current Chapter 4, 'at west' and 'at east' were written in quotation marks or in italic). Generalising the expressions 'at west' and 'at east' seemed the most practical way to enter and treat data in SPSS worksheets, and to display data and results in tables and figures.

²⁵ In other passages, 'geolect/stimuli/area... at west' and 'geolects/stimuli/area... at east' will also be generalized.

Chain A			Chain <i>B</i>			
Items	Data point	Items	Items	Data point	Items	
'at west'	(participants)	'at east'	'at west'	(participants)	'at east'	
Piedmon3	Occitan-1	Occitan-2	Piedmon9	Occitan-7	Occitan-8	
Occitan-1	Occitan-2	Piedmon3	Occitan-7	Occitan-8	Piedmon9	
		filler			filler	
Occitan-2	Piedmon3	Emilian-4	Occitan-8	Piedmon9	Lombard-10	
Piedmon3	Emilian-4	Romagnol-5	Piedmon9	Lombard-10	Emilian-11	
Emilian-4	Romagnol-5	Piedmon3	Lombard-10	Emilian-11	Piedmon9	
		filler			filler	
Romagnol-5	Tuscan-6	Emilian-4	Emilian-11	Tuscan-12	Lombard-10	
		filler			filler	

Table 4.3. Item sets played to the participants for each data point. Stimulus sets are in regular font, filler sets are in italics.

Considering that, as presented above, for each target geolect 50% of items were produced by the male speaker, 50% by the female speaker (in order to control for gender of voice, see Sections 4.1.4 and 4.2.2.2.4), and that in each data point²⁶ 50% of participants were male and 50% were female (in order to control for the participant's gender, see Sections 4.1.4 and 4.2.3.1), in the statistical tests testing the predictions made by the post-Wartburg hypothesis—presented in Sections 4.3.*A*.5 and 4.3.*B*.5 below—these were the variables studied and the respective levels:

- *a. intelligibility score* was the dependent variable;
- *b. 'data point'* was the independent variable, with two levels (corresponding to the two data points whose intelligibility scores were compared in each individual test)²⁷;
- *c. gender of voice*—namely the gender of the speaker who produced the stimuli—was a control variable with two levels (male and female);
- d. participant's gender was a control variable with two levels (male and female).

²⁶ However, see the two Occitan-1 and Occitan-7 exceptions in Section 4.2.3.2.

²⁷ See Section 4.2.5.2 for a detailed presentation of the independent variable 'data point'.

Adding the fillers allowed me to balance the item order in the acoustic lists according to a 4-level²⁸ Latin Square design for each data point, including the data points whose intelligibility test presented only one experimental target geolect (for instance, in chain *A*, such data points were Occitan-2, Romagnol-5 and Tuscan-6. See Table 4.3 above). Latin square designs are normally chosen in order to avoid order effects (see "counterbalancing" in Keating & Jegerski 2015: 9). Table 4.4 below reports the 28 sentence meanings whose translations finally constituted the items, in the order in which they were played to the participants of each data point. The four columns on the right correspond to the four acoustic lists obtained by the four levels Latin Square design. Each column reports, from the top down, the sequence of the voices who produced each item in the acoustic list: WM= male voice (speaking the geolect) 'at west'; WF= female voice 'at west'; EM= male voice 'at east'.

		Acoustic list			
		1 st	2 nd	3 rd	4 th
1	I cut my finger with a knife.	WM	WF	EM	EF
2	The candle flame melted the wax.	WF	EM	EF	WM
3	The baby slept in his crib.	EM	EF	WM	WF
4	How long can you hold your breath?	EF	WM	WF	EM
5	Stir your coffee with a spoon.	WF	EM	EF	WF
6	Old metal cans were made with tin.	EM	EF	WM	EM
7	The beer drinkers raised their mugs.	EF	WM	WF	EF
8	Hold the baby on your lap.	WM	WF	EM	WM
9	The workers are digging a ditch.	EM	EF	WF	EM
10	Spread some butter on your bread.	EF	WM	EM	EF
11	The plow ²⁹ was pulled by an ox.	WM	WF	EF	WM
12	The shepherd watched his flock of sheep.	WF	EM	WM	WF

²⁸ Corresponding to the two levels in *b* plus the two levels in *c*.

²⁹ In this list, for "plow" and "mold" I use the original American spelling used in Kalikow et al., 1977.

13	The judge is sitting on the bench.	EF	WF	EM	WM
14	The cut on his knee formed a scab.	WM	EM	EF	WF
15	The farmer baled the hay.	WF	EF	WM	EM
16	She wore a feather in her cap.	EM	WM	WF	EF
17	At breakfast he drank some juice.	WF	EM	WM	WF
18	Raise the flag up the pole.	EM	EF	WF	EM
19	The landlord raised the rent.	EF	WM	EM	EF
20	Tom fell down and got a bad bruise.*	WM	WF	EF	WM
21	The chicks followed the mother hen.	EM	WM	WF	EM
22	A bear has a thick coat of fur.	EF	WF	EM	EF
23	His boss made him work like a slave.	WM	EM	EF	WM
24	The cigarette smoke filled his lungs.	WF	EF	WM	WF
25	The stale bread was covered with mold.	WM	WF	EM	EF
26	Our seats were in the second row.	WF	EM	EF	WM
27	That accident gave me a scare.*	EM	EF	WM	WF
28	I've got a cold and a sore throat.*	EF	WM	WF	EM

Table 4.4. Four levels Latin square design. *For the sentence meanings marked with an asterisk, see the first lines just below.

As far as the Romagnol-5 spoken items are concerned, the inadequate translation of sentence 27 was replaced with the translated sentence 'Wash the floor with a mop'. As far as the Occitan-7 spoken items are concerned, the inadequate translations of sentences 20 and 28 were replaced respectively with the translations of 'Instead of a fence, plant a hedge' and 'Wash the floor with a mop'.

In each data point—excluding Occitan-1 and Occitan-7 data points, where there were fewer than 24 participants (and irregularly divided into male and female, see Section 4.2.3.3)—each of the four acoustic lists was played to 6 participants (25%). It can be seen that, in each of the four acoustic lists, stimulus 1 was produced according to one different combination of *item geolect – gender of voice* (see Table 4.4). The same was also true for stimulus 2, but the combinations of *acoustic list – item geolect – gender of voice* were all in a different order from the ones corresponding to sentence 1. The same was true for stimulus 3, etc. Therefore, this design allowed each participant to listen to 14 items spoken in the geolect 'at west' and to 14 items spoken in the geolect 'at east'.

Each participant also listened to an equal number of items spoken by the male and by the female voice for each of the two geolects. For each participant, the combination of *item geolect – gender of voice* was purposely not regularly repeated along the acoustic list, thanks to the Latin square design. This was done, as said above, in order to avoid order effects; and, within each group of 24 participants, each possible combination of *sentence meaning – target geolect – gender of voice* was encountered by an equal number of male participants and female participants (i.e. 3) (see "counterbalancing" in Keating & Jegerski 2015: 9).

Before running the intelligibility tests with the actual participants, the entire set of 28 translated sentences (items) of each translation geolect was played to two native speakers of the translation geolect itself (e.g. the items in Piedmontese-3 geolect were played to two native speakers of Piedmontese-3 geolect, who would not have participated in the actual intelligibility experiment). This was done in order to test the validity of the stimuli: if the two native speakers scored 100% correct responses, this fact would have indicated that possible lower scores obtained by actual participants could not be plausibly interpreted as being due to a defective recording, or inappropriate translations, or to too difficult tasks (Gooskens, 2013). The possible unintelligible sentences would have been eliminated from the acoustic lists. It turned out that the two listeners of all localities scored 100% correct responses.

Furthermore, a pilot study was run in the Lombard-10 data point among five Lombard native speakers ('pilot participants', mean age 70.4 years) to ensure that the questions in the questionnaire were clear and unambiguous and that the translated sentences that had been selected were suitable as stimulus material. It turned out that no issues materialised in this respect, nor were any raised by the five pilot participants.

4.2.2.3. ANSWER SHEET

The final word (target word) of each of the 28 sentences (items) had to be written down in an answer sheet. A numbered blank space corresponded to each item. The participant was allowed to leave the blank space empty if s/he was not able to provide a translation.

4.2.3. PARTICIPANTS: SELECTION CRITERIA AND DESCRIPTIVE STATISTICS

Section 4.2.3.1 presents the selection criteria, namely the participant characteristics required for the test. Section 4.2.3.2 describes how the potential participants were contacted, recruited, and

selected. Finally, Section 4.2.3.3 describes the selected participants, namely the ones who finally met all the selection criteria once the tests were run and whose data entered the statistical analyses.

4.2.3.1. PARTICIPANT SELECTION CRITERIA

In this section, the participant characteristics will be listed and explained.

a. REGIONAL LANGUAGE COMPETENCE. Participants should be native speakers of the local geolect (of the regional language), have grown up with parents and grandparents who were native speakers of the local geolect, and who, moreover, spoke the local geolect at home.

b. PARTICIPANTS' *GENDER*. There is some evidence that, in conditions of language shift, women tend to abandon the L language before men (Labov, 1990; see an overview in Romaine, 2008; see also Price & Tamburelli, 2016; see Section 4.1.4). In order to control for participants' gender, an equal number of male and female participants should be selected, and the four different acoustic lists obtained by the Latin square design (see Section 4.2.2.2.6 above) should be distributed in an even way between male and female participants.

c. PARTICIPANTS' AGE. The age of participants should be approximately that of between 65 and 80 years. This, besides ensuring that the participants had at least a passive native-like competence of the local geolect—at least in the administratively Italian parts of the chains (see point *a* above)— should also ensure that the female participants had been exposed to the local geolect as much as their fellow male citizens, and should make it probable that female participants had been active speakers of the local geolect at least during their childhood and youth (see point *b* above). In fact, all the regional languages involved in the current study, excepting Tuscan/Italian, are listed in the UNESCO Atlas of the World's Languages in Danger (Moseley 2010; see also Soria 2015), meaning that their use is declining among younger generations (Coluzzi 2007, 2009; Tosco 2008, 2011; Tamburelli 2014; Brasca 2021; Coluzzi, Brasca & Scuri 2021). Scholars agree that in Italy the gradual abandonment of regional languages started in the 1950s, in concomitance with the popular diffusion of television (Tamburelli 2010; see De Mauro 1979). In 1954, when RAI (Italian Television) started its broadcasts, the 65-years-old participants were born or were 1 year old.

d. FOREIGN LANGUAGE AND LATIN LANGUAGE COMPETENCE. As we have seen, any language competence (e.g. English, Spanish, Latin) might facilitate intelligibility of the target unknown geolects (see Sections 4.1.4 and 4.2.2.1). For this reason, participants should have as low a level of foreign and Latin language competence as possible. They should possibly have exclusive
competence of their native variety of the regional language and of the State H language, Italian for Italian citizens and French for French citizens. They should be born and have possibly permanently lived in the data point locality, and had moved from their region as little as possible during their life.

e. CONTACT WITH TARGET AREAS AND EXPOSURE TO TARGET LANGUAGES. As we have seen, previous literature argues that contact with target area/speakers and exposure to the target language may improve intelligibility of the stimulus sentences (see Sections 4.1.4 and 4.2.2.1). For this reason participants should have had as low a contact as possible with the target areas, and as low exposure as possible to the target languages. However, it was not possible to exclusively recruit participants who never had any contact/exposure at all with/to target areas and languages. In fact, the linguistic areas involved in the present study border one another, the adjacent data points are located at a distance of 42 to 266 km from one another by road (27 to 199 as the crow flies), and inter-regional business and tourism have been normal practice since von Wartburg's time to our days, also across national boundaries.

f. Participants should present no hearing impairments.

4.2.3.2. PARTICIPANTS' RECRUITMENT AND SELECTION

For each data point, a local native speaker (contact person) was contacted and asked to help the researcher by contacting and recruiting the participants. The contact person was normally sought and met among the most active representatives of local social clubs (e.g. secretaries of clubs for the elderly). In order to guarantee the even distribution of the 4 acoustic lists among the participants (see "counterbalancing" in Keating & Jegerski 2015: 27), it was decided that 24 participants should be tested for each data point. Then, the contact person was instructed about the selection criteria that the participants should meet (see Section 4.2.3.1 above).

Therefore, in the 10 data points situated in the Italian administrative territory, 24 to 30 (potential) participants were recruited, namely some participants more—where possible—than the planned number (24). This is because it was to be expected that some recruited participants would eventually turn out to not match the selection criteria at the moment of the experiment (e.g. hearing

impairments, multi-geolectal³⁰ background; see "attrition" and "additional participants" in Keating & Jegerski 2015: 27). In the Occitan-1 data point, it was not possible to recruit more than 17 participants; in the Occitan-7 data point, the contact person managed to recruit 23 participants. Indeed, these are the two Occitan-speaking localities that are situated in the French administrative territory, where language shift is at a more advanced stage than in the Italian administrative territory, and people with a native or quasi-native competence of the local variety of the regional language (Occitan) are objectively few by now.

When not all 24 participants were found in the same locality (which was supposed to also be the item locality, as in most cases it actually was, see Tables 4.1 and 4.2 above), the missing participants were recruited in the nearest hamlets that are historically part of the same municipality, and where a geolect is spoken that—quoting the contact people's judgment, later confirmed by other citizen fellows—is "fairly/quite similar" to the one spoken in the main participant locality. These people normally agreed on this kind of judgment, and expressed a clear opinion about whether and what other geolects, spoken in nearby localities, were—in their own words—"a little" or "very" different from theirs (cf. Tang & van Heuven, 2009). I trusted their opinion since previous research has shown that the results of opinion testing (asking the participants "how well *they think* they understand" the target geolect, see Gooskens, 2013), correlate "very well" with the results of functional intelligibility studies³¹ (van Bezooijen & van Heuven, 1997; reported also in Tang & van Heuven, 2009: 711; see also p.709).

During the individual experiment sessions (while compiling the questionnaire and while running the intelligibility test, see Section 4.2.4 below) 34 participants revealed and/or declared themselves as not meeting the selection criteria (i.e. they declared a multilingual background, hearing impairments, lack of native competence). These participants were excluded from the final list of the selected participants, meaning that their responses were excluded from the data of the study (i.e. from the statistical analyses). Tables 4.5 and 4.6 below report—for chain A and chain B respectively—the number of people who were recruited by the contact person or by me in each

³⁰ Given the polysemic (hence ambiguous) use of 'dialect' in the literature, which I have questioned in Chapters 1 and 2 (see specifically the 'category problem'), in this study I will use the form 'multi-*geo*lectal' instead of the more common 'multi-dialectal' (see Section 1.4.1).

³¹ However, results of opinion testing reflect less accurately the results of comparativists/dialectologists than what results of functional testing do (Tang & van Heuven, 2009). This explains why in the current study functional testing (SPIN) was preferred to the less time-consuming option of opinion testing.

locality and participated in the experiment (total of participants), the number of the participants who were excluded from the statistical analyses because during the session they did not meet the selection criteria, and finally the resulting number of the selected participants, namely of the ones whose responses constituted the data for the statistical analyses.

Chain A	Recruited	Excluded	Hearing	Non-native	Multilingual	Selected
			impairment	competence	background	
Occitan-1	17	6	2	4	-	11 (8M+3F)
Occitan-2	26	2	2	-	-	24
Piedmon3	27	3	3	-	-	24
Emilian-4	27	3	2	-	1	24
Romagnol-5	24	-	-	-	-	24
Tuscan-6	30	6	1	-	5	24
TOTAL	151	20	10	4	6	131

Table 4.5. Chain A: number of recruited participants (who participated in the test), excluded participants (who did not meet the selection criteria during the test), and selected participants (who met the selection criteria and whose responses consequently constituted the data for the statistical analyses).

Chain B	Recruited	Excluded	Hearing	Non-native	Multilingual	Selected
			impairment	competence	background	
Occitan-7	23	-	-	-	-	23
						(12M+11F)
Occitan-8	27	3	3	-	-	24
Piedmon9	25	1	1	-	-	24
Lombard-10	27	3	2	-	1	24
Emilian-11	28	4	3	-	1	24
Tuscan-12	27	3	1	-	2	24
TOTAL	157	14	10	-	4	143

Table 4.6. Chain *B*: number of recruited participants (who participated in the test), excluded participants (who did not meet the selection criteria during the test), and selected participants (who met the selection criteria and whose responses consequently constituted the data for the statistical analyses).

In the Occitan-1 locality, where the initial number of recruited participants was 17, during the test, 4 participants declared themselves as having too little competence of the local geolect in order to accomplish the task, since they had actually not been exposed to Occitan during their childhood

and youth. Hence, in that locality, the final number of selected participants was 11 (since two further recruited participants had a hearing impairment).

Finally, 131 participants turned out to meet the selection criteria for chain *A*, and 143 for chain *B*. Henceforth, these will be simply referred to as the *participants* of the study. They will be described in the next section.

4.2.3.3. PARTICIPANTS: DESCRIPTIVE STATISTICS

In this section, participants will be presented separately for chain A and chain B.

4.2.3.3.1. CHAIN A

A total of 131 participants were selected for the chain A study (mean age= 71.3 years, min-max= 37-92, SD= 6.856; 68 male and 63 female). In Table 4.7 and Figure 4.4, details of the distribution of participants' gender and age in chain A are displayed.

N	68 male	63 female
Percentage	51.91%	48.09%
Mean age in years (SD)	71.47 (7.789)	71.11 (5.739)

 Table 4.7. Chain A participants' gender, and age by gender.



Figure 4.4. Chain *A* participants' age by gender. The little circles and the asterisk indicate, respectively, the outlier and extreme outlier age values of participants n. 1, 5, 9 and 27, according to the numbering that identifies each of the 131 participants in the entirety of chain *A*.

In each of the data points situated in the Italian administrative territory, namely in five data points out of six, there were 24 participants—12 male and 12 female. They all were native speakers of the local geolect, mono-geolectal, having grown up with parents and grandparents who were native speakers of the local geolect and who spoke the local geolect at home. In these five data points as a whole, the participants' mean age was 70.88 years (min-max= 53-81; *SD*= 6.042). Except for one participant aged 53, the distribution of the age substantially matched the participant age selection criterion (broadly between 65 and 80 years).

In the Occitan-1 data point (Occitan-speaking Alps of France), there were 11 participants (mean age= 75.82 years, min-max= 37-92, *SD*= 14.4; 8 male and 3 female). Given the limited number of possible participants in this data point, I extended recruitment to younger and older people. Therefore, in this data point, four people aged 92, 87, 85, and 37 years were recruited and selected. All the 11 participants had self-reported and were reported by the contact person and other participants as endowed with good linguistic competence of the local geolect.

4.2.3.3.2. CHAIN B

A total of 143 participants were selected for the chain *B* study (mean age= 71.91 years, min-max= 38-98, *SD*= 6.664; 72 male and 71 female). In Table 4.8 and Figure 4.5, details of the distribution of participants' gender and age in chain *B* are displayed.

N	72 male	71 female
Percentage	50.35%	49.65%
Mean age in years (SD)	72.06 (4.878)	71.76 (8.118)

 Table 4.8. Chain B participants' gender and age by gender.



Figure 4.5. Chain *B* participants' age by gender. The little circles indicate the outlier age values of participants n. 4 and 5, according to the numbering that identifies each of the 143 participants in the entire chain *B*.

In each of the data points situated in the Italian administrative territory, namely in five data points out of six, there were 24 participants—12 male and 12 female. They all were native speakers of the local geolect, mono-geolectal, having grown up with parents and grandparents who were native speakers of the local geolect, and who spoke the local geolect at home. In these five data points as a whole, the participants' mean age was 71.42 years (min-max= 65-80, SD= 4.859). The distribution of the age matched the participants' age selection criterion (broadly between 65 and 80 years).

In the Occitan-7 data point (Occitan-speaking Alps of France), there were 23 participants (12 male and 11 female; mean age= 74.43 years, min-max= 38-98, *SD*= 12.288). Given the limited number of possible participants in this data point, I extended recruitment to younger and older people. Therefore, in the Occitan-7 locality, 6 people aged 98, 90, 89, 87, 86, and 38 years were recruited and selected. All the 23 participants had self-reported and were reported by the contact person and other participants as endowed with good linguistic competence of the local geolect.

4.2.3.3.3. ETHICS STATEMENT

In this section I will present the measures I took in order to conduct my research ethically. I followed the "key principles relating to ethical research" indicated by the College of Arts,

Humanities and Business at Bangor University in the "Research Ethics Guidelines" document for research carried out involving human subjects. In turn, this document refers to the general guidance set out in the Declaration of Helsinki, a statement of ethical principles for medical research involving human subjects, developed by the World Medical Association (WMA) (<u>https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/</u>). Before starting the data collection, I did an "Application for Approval by Research Ethics Committee" to the College of Arts, Humanities and Business at Bangor University. The current study received ethical approval from Bangor University's Research Ethics Committee.

1. Briefing about the research purposes and procedure: before beginning the data collection, each participant was fully informed about the purpose (assessing intelligibility of geolects different from his/her own one), procedure (presentation of recorded sentences, writing down the target word) and intended possible uses of the research (scientific publications).

2. *Voluntary participation:* each participant was informed that s/he had the right to withdraw from the research at any point with no need of presenting the reasons of his/her withdrawing. Each participant was required to sign the Participant Consent Form (see Appendices 1a and 1b) if s/he agreed to take part to the research.

3. Confidentiality and preservation of anonymity: each participant was assured that the confidentiality of materials and information supplied by him/her and his/her anonymity would be respected. The only personal piece of information that appears in a written form in any document produced in my research is the participant's signature, which was required on the consent form. In any case, it would not be possible to associate any contribution (questionnaire or answer sheet) with a specific signature, in that the consent forms were not numbered and no names (or addresses) were recorded or stored anywhere else. In fact, in my research no personal information was needed about participants, beyond age, gender and dialect (i.e. geolect) spoken. Therefore, no names or addresses were collected. As communicated to the participants, the data of my research would be published as aggregate quantitative data in all the documents that would be produced and stored so that participants would be anonymized and identified only via a numeric identifier.

4. *Publication and dissemination of results:* each participant was informed that results would be published in journal articles and other possible academic publications. They will be published as part of a quantitative study, and therefore no sensitive data will be accessible to the reader. No

personal information such as names or addresses will be published (nor were recorded, as stated above).

5. Consent form and participant information sheet: each participant was required to give his/her informed consent by signing the Consent Form after reading it (see Appendices 1a and 1b). By signing the consent form s/he declared to "allow the researcher to treat the data in anonymous form, and to publish the data in academic context for research aims." S/he also declared that "s/he had been informed [by the researcher] about the procedure of the research and about his/her right to withdraw from the research at any moment, with no need of providing a justification to the researcher." Especially considering that some of the participants were elderly, before requesting them to sign the consent form, I explained every point of its content to each participant orally, providing examples of the use of the data and asking whether further clarification was needed. I also provided a clear and detailed oral explanation of all the points above.

6. *Safe data storage:* the signed consent forms were stored in a safe in my house and will be kept there up to my graduation. They will be destroyed upon the completion of my PhD.

All the rest of data concerning my research were recorded in password-protected documents and will be retained up to my graduation, after which they will be cleared. In these documents participants are anonymized. The documents stored do not report any information that would allow the identification of participants.

7. *Minors and vulnerable adults:* this research did not involve minors or vulnerable adults. However, some of the participants were elderly. In this respect, I asked the contact people to strictly limit the recruitment to potential participants who were—to their direct knowledge—of a physical and mental state such as to be able to give conscious consent to their participation, and to participate without harm for their physical and mental health. For this purpose, I provided my contacts with a detailed description of what the participation consisted of. All the elderly participants were contact people's acquaintances.

4.2.4. PROCEDURE

Section 4.2.4.1 describes how the test session was prepared, Section 4.2.4.2 presents the compilation of the questionnaire, and finally Section 4.2.4.3 presents the intelligibility test (task).

4.2.4.1. PREPARATION FOR DATA COLLECTION

After recruiting the participants, the contact person and I agreed on a period and a public space in which the test sessions could take place. In some cases, the contact person and the participants managed to schedule a regular sequence of appointments with me. In these cases, I scheduled one session per half an hour, as per the duration suggested by the pilot tests. The tests were conducted in individual sessions and took place in a quiet room, furnished with a table and two chairs. Some participants preferred to meet me at their house. Data collection in each data point lasted from two to three days.

4.2.4.2. BACKGROUND QUESTIONNAIRE

Once the participant had taken his/her place at the table, s/he was asked to complete the consent form. Then s/he was asked to fill in the background questionnaire. The consent form (see Appendices 1a and 1b) and the questionnaire (see Appendices 2a and 2b) were provided in standard Italian to the Italian citizens, and in standard French to the French citizens. It took 10-15 minutes for each participant to complete the entire questionnaire.

By means of the questionnaire, I collected 10 responses per participant, for a total of 2,740 responses (10 questions³² x 274 participants) in the entire study (both chains); 1,310 responses in chain *A* and 1,430 responses in chain *B*.

4.2.4.3. INTELLIGIBILITY TEST (TASK)

After completing the background questionnaire, each participant was instructed in detail about the intelligibility test. I informed them that they would listen to 30 sentences, and after each sentence they would have to record the Italian or French translation (depending on the location) of the final word (target word) on the answer sheet in the corresponding blank space (see Appendices 3a and 3b). Participants were allowed to leave the space for the target word empty if they were not able to provide a translation, and they could decide when they were ready to listen to the next item. When agreed, I would press the button to play the next item. Once the start button had been pressed, there

³² However, a clarification is needed: the questions presented in the questionnaire were formally ten (Q1 to Q10), but some of them required a double response, namely about geolect or area 'at west' and geolect or area 'at east'. Moreover, question 10 actually required three responses, namely about the participant's age, gender, and residence region.

was a 2.0 second pause, and then the participant would listen to the new item. Several other studies used a pre-stimulus interval in their experiments, such as Thierry & Wu (2007), Gooskens et al. (2008), Wu & Thierry (2010), and Gooskens & Heeringa (2014).

The items (high-quality mp3 stereo 44100Hz, 320kbps files) were played by a Sony Walkman digital audio player, and listened to by the participant through high-fidelity SONY MDR-ZX11ONC headphones.

As presented in Section 4.2.1.3, the first two items of the acoustic list were practice items, which also served to adjust the headphones and the volume.

If we exclude the responses to the filler items (which had no experimental relevance), I obtained 5,656 intelligibility responses³³ in the whole two-chain study. In each of the 4 administratively Italian data points that had two experimental target languages (i.e. Occitan-1, Piedmontese-3, Emilian-4; Occitan-7, Piedmontese-9, Lombard-10), I obtained 672 intelligibility responses (28 stimuli \times 24 participants). In each of the 6 administratively Italian data points that had one experimental target language (i.e. Occitan-2, Romagnol-5, Tuscan-6; Occitan-8, Emilian-11, Tuscan-12), I obtained 306 intelligibility responses (28 stimuli \times 24 participants). In the Occitan-1 data point, I obtained 308 intelligibility responses (28 stimuli \times 11 participants). In the Occitan-7 data point, I obtained 644 intelligibility responses (28 stimuli \times 23 participants).

4.2.5. UPDATED POST-WARTBURG HYPOTHESIS PREDICTIONS

In Section 4.1.2.1, I introduced the predictions made by the post-Wartburg hypothesis in general terms. Now, after having also introduced the design of the experiment and the actual data points investigated in the two chains, it seems useful to me to update those predictions, making specific reference to the actual data points. I will do this in the next section—4.2.5.1. This updating will help the reader to better follow the next Section 4.3 (Results). For the sake of simplicity, I will refer only to chain *A* data points; this is because I am presenting chain *A* results before chain *B* ones, and because the logical steps followed in testing the predictions with chain *A* data are identical, *mutatis mutandis*, to those followed with chain *B* data. Finally, in Section 4.2.5.2, I will present in more specific statistical terms how I will test each prediction.

³³ 7,672 responses, if one includes the responses to the filler items.

4.2.5.1. UPDATED PREDICTIONS WITH REFERENCE TO CHAIN *A* DATA POINTS



Figure 4.6 below recalls the position of chain *A* data points.

Figure 4.6. Chain A data points. The languages of the Gallo-"Italic" group are spoken within the thick line.

Below are the predictions made by the post-Wartburg hypothesis (introduced in Section 4.1.2.1), updated by making specific reference to chain A data points.

PREDICTION 1. Today (and already in von Wartburg's time), intelligibility is higher between geolects spoken at the two sides of the Apennines—namely between Tuscan-6 and Romagnol-5— than between Piedmontese-3 and Occitan-2.

PREDICTION 1-a. Today, intelligibility is higher between the geolects spoken at the two sides of the Apennines—namely between Tuscan-6 and Romagnol-5—than between the geolects spoken at the two sides of the Alps—namely between Occitan-2 and Occitan-1.

PREDICTION 2. Today (and already in von Wartburg's time), intelligibility decreases more abruptly across the Alps (namely along the portion of the chain running from Occitan-1, through Occitan-2, to Piedmontese-3) than across the Apennines (namely along the portion of the chain running from Emilian-4, through Romagnol-5, to Tuscan-6).

PREDICTION 3. Today (and already in von Wartburg's time), no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility

1. is lower

and

2. decreases more abruptly

than across the *Alps* (namely along the portion of chain running from Occitan-1, through Occitan-2, to Piedmontese-3).

*PREDICTION 3**.³⁴ Today, no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility

a. is lower

and

b. decreases more abruptly

than across the *Apennines* (namely along the portion of chain running from Emilian-4, through Romagnol-5, to Tuscan-6).

4.2.5.2. How to test the predictions statistically

In this section, I will present in statistical terms how I intend to test the predictions illustrated above by means of the actual intelligibility data that I collected. In this section, I will refer only to chain *A* data points, understanding that the same design will also be followed, *mutatis mutandis*, for chain *B*.

PREDICTION 1. I will test Prediction 1 (presented in Section 4.2.5.1) by comparing

- the intelligibility score obtained by the Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility score obtained
 - a. by Occitan-1 participants on Piedmontese-3 stimuli; and
 - b. by Piedmontese-3 participants on Occitan-2 stimuli.

Therefore, two null hypotheses (H_0a and H_0b) and the respective alternative hypotheses (H_1a and H_1b) have to be formulated:

³⁴ One should note that Prediction 3* should be tested instead of Prediction 3 if results indicate that the previous Predictions 1/1-a and 2 are not borne out (see Section 4.1.2.1).

H₀*a*: Tuscan-6 participants' score = Occitan-1 participants' score;

H₁*a*: Tuscan-6 participants' score \neq Occitan-1 participants' score.

 H_0b = Tuscan-6 participants' score = Piedmontese-3 participants' score;

 H_1b = Tuscan-6 participants' score \neq Piedmontese-3 participants' score.

Taking the test corresponding to comparison *a* as an example,

- 1. *intelligibility score* is the dependent variable;
- 2. 'data point' is the independent variable with two levels (Tuscan-6 and Occitan-1);³⁵
- 3. gender of voice is a control variable with two levels (male and female);
- 4. *participant gender* is a control variable with two levels (male and female).

This pattern applies, *mutatis mutandis*, to the following test (corresponding to comparison *b*) and to all other tests of significance testing the predictions made by the post-Wartburg hypothesis (Sections 4.3.*A*.5 and 4.3.*B*.5 below).

Bullet point 2 above needs some clarifications. Indeed, it is important to point out that in my statement "*'data point'* is the independent variable", *'data point'* is intended as an expression simplified for the sake of brevity. Indeed, what is going to be compared in *a* is

- the score obtained by Tuscan-6 data point participants on Romagnol-5 stimuli, with
- the score obtained by Occitan-1 data point participants on Piedmontese-3 stimuli.

That is, what is going to be compared in *a* are not the scores obtained by two different data point groups *on the same set of stimuli*, but rather the scores obtained by two different data point groups *on a different set of stimuli each*. This applies to several tests of significance that will be conducted to test the post-Wartburg hypothesis predictions (Sections 4.3.*A*.5 and 4.3.*B*.5 below). In some others of those tests of significance, what will be compared instead are the scores obtained by two different data point groups *on the same set of stimuli*. This means that the most general and precise way of defining what varies as independent variable in testing the predictions is not 'the value of *data point*' but rather 'the combination of *value of data point* and *value of stimuli*'.³⁶ This in turn also means that, continuing with the example in *a* above, the two levels of the independent variable

³⁵ See below for some important clarifications on bullet point 2, namely on the independent variable 'data point'.

³⁶ For this reason, a more complete (not abbreviated) way of reporting the null hypothesis H_0a above would be: 'Tuscan-6 participants' score *on Romagnol-5 stimuli* = Occitan-1 participants' score *on Piedmontese-3 stimuli*'. This applies to all the null and alternative hypotheses presented in this section.

'*data point*' are not simply

- 1. data point-6 and
- 2. *data point-1*,

as I stated in bullet point 2 above for sake of brevity, but rather

- 1. the combination of *data point-6* and *stimuli-5*, and
- 2. the combination of *data point-1* and *stimuli-3*.

In the next pages of the current section and in the next Section 4.3 (Results), the above considerations should be borne in mind when encountering the expression '*data point*' as used to refer to the independent variable in the statistical tests. This explains why in the above lines and in the next sections, I will write 'data point' (with inverted commas) when this is used to refer to the independent variable.

After testing H_0a and H_0b , Prediction 1 will ultimately be tested on the basis of

- a'. the direction³⁷ of the *possible* difference between the intelligibility scores obtained
 - o by Tuscan-6 participants on Romagnol-5 stimuli, and
 - o by Occitan-1 participants on Piedmontese-3 stimuli;
- b'. the direction of the *possible* difference between the intelligibility scores obtained
 - o by Tuscan-6 participants on Romagnol-5 stimuli, and
 - o by Piedmontese-3 participants on Occitan-2 stimuli.

As presented in Section 4.2.1.1 (bullet point 4), in comparison *a*', Occitan-1 scores replace Occitan-2 scores. This is because Occitan speakers of Italy (Occitan-2) normally speak Piedmontese too, so their intelligibility score on Piedmontese-3 items would not be informative with respect to the aims of the current study.

As presented in Sections 4.1.5 and 4.2.1.1, the results of Prediction 1 testing would be formally more complete if it was possible to compare the scores obtained by Occitan-1 and Piedmontese-3 participants (respectively in *a'* and *b'*) with the scores obtained by monolingual (non-Italian speaking) Romagnol-5 *participants* on Tuscan-6 *stimuli*. However, this comparison could not be made in the current study since Romagnol speakers of our days are all literate in the Italian language

³⁷ By 'direction of the difference' I mean whether Tuscan-6 participants' scores are higher than Occitan-1 participants' scores or the other way around.

(which is based on Tuscan) and are massively exposed to Italian-speaking media.³⁸ These considerations also apply to the testing of the next predictions.

PREDICTION 1-a. I will test Prediction 1-a (presented in Section 4.2.5.1) by comparing

- the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility score obtained
 - a. by Occitan-1 participants on Occitan-2 stimuli, and
 - b. by Occitan-2 participants on Occitan-1 stimuli.

Therefore, two null hypotheses (H_0a and H_0b) and the respective alternative hypotheses (H_1a and H_1b) have to be formulated:

 H_0a : Tuscan-6 participants' score = Occitan-1 participants' score;

H₁*a*: Tuscan-6 participants' score \neq Occitan-1 participants' score.

 H_0b = Tuscan-6 participants' score = Occitan-2 participants' score;

 H_1b = Tuscan-6 participants' score \neq Occitan-2 participants' score.

After testing H_0a and H_0b , Prediction 1-*a* will ultimately be tested on the basis of

- *a'*. the direction of the *possible* difference between the intelligibility scores obtained
 - o by Tuscan-6 participants on Romagnol-5 stimuli, and
 - by Occitan-1 participants on Occitan-2 stimuli;
- b'. the direction of the *possible* difference between the intelligibility scores obtained
 - o by Tuscan-6 participants on Romagnol-5 stimuli, and
 - o by Occitan-2 participants on Occitan-1 stimuli.

PREDICTION 2. I will test Prediction 2 (presented in Section 4.2.5.1) by means of two comparisons, I and II.

³⁸ One should remember that it is likely that such intelligibility data could have been collected from some monolingual Romagnol speakers in von Wartburg's time, but unfortunately they weren't, as far as I am aware.

I. First I will compare:

- *a.* the magnitude (effect size) of the *possible* difference between the intelligibility score obtained
 - by Emilian-4 participants on Romagnol-5 stimuli and
 - o by Tuscan-6 participants on Romagnol-5 stimuli.
- *b.* with the magnitude (effect size) of the *possible* difference between the intelligibility score obtained
 - by Occitan-1 participants on Occitan-2 stimuli and
 - o by Piedmontese-3 participants on Occitan-2 stimuli,

Therefore, two null hypotheses (H_0a and H_0b) and the respective alternative hypotheses (H_1a and H_1b) have to be formulated:

H₀*a*: Emilian-4 participants' score = Tuscan-6 participants' score;

H₁*a*: Emilian-4 participants' score \neq Tuscan-6 participants' score.

H₀*b*: Occitan-1 participants' score = Piedmontese-3 participants' score;

H₁*b*: Occitan-1 participants' score \neq Piedmontese-3 participants' score.

After testing H_0a and H_0b , a new null hypothesis (H_0) will be formulated, along with the respective alternative hypothesis (H_1):

H₀: magnitude of difference in a = magnitude of difference in b;

H₁: magnitude of difference in $a \neq$ magnitude of difference in *b*.

Therefore, I will calculate the magnitude of the *possible* difference in a and of the *possible* difference in b Prediction 2 will ultimately be tested on the basis of whether the magnitude (effect size) is larger in a or in b.

II. Secondly, I will compare:

- *a.* the magnitude of the *possible* difference between
 - Romagnol-5 participants' intelligibility score on Emilian-4 stimuli, and
 - o Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli,

- *b.* with the magnitude of the *possible* difference between
 - Occitan-2 participants' intelligibility score on Occitan-1 stimuli, and
 - Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli.

So, two null hypotheses (H₀a,b) with the respective alternative hypotheses (H₁a,b) have to be formulated.

H₀*a*: Romagnol-5 participants' score = Tuscan-6 participants' score;

H₁*a*: Romagnol-5 participants' score \neq Tuscan-6 participants' score.

H₀*b*: Occitan-2 participants' score = Piedmontese-3 participants' score;

H₁*b*: Occitan-2 participants' score \neq Piedmontese-3 participants' score.

Therefore, I will calculate the magnitude of the *possible* difference in a and of the *possible* difference in b As in comparison I, Prediction 2 will ultimately be tested on the basis of whether the magnitude (effect size) is larger in a or in b.

PREDICTION $3^{*,39}$ As presented above (see Section 4.1.2.1), for the sake of simplicity Prediction 3^{*} synthesises Predictions 1/1-a and 2 and multiplies them for each of the two remaining pairs of data points which are adjacent in the chain. Therefore, in order to test it, I will follow the same procedure that I followed to test Predictions 1/1-a and 2, applying it to each of the two remaining pairs of data points. Namely, I will test Prediction 3^{*} (see Section 4.2.5.1) by comparing

- the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility scores obtained
 - a. by Piedmontese-3 participants on Emilian-4 stimuli;
 - b. by Emilian-4 participants on Piedmontese-3 stimuli;
 - c. by Emilian-4 participants on Romagnol-5 stimuli (already compared); and
 - d. by Romagnol-5 participants on Emilian-4 stimuli.

Then I will compare

³⁹ As we will see in Sections 4.3.*A*.5.2 to 4.3.*A*.5.4, the results of the precedent predictions testing (Predictions 1, 1-a, and 2) indicate that Prediction 3* should be tested instead of Prediction 3 (see Section 4.1.2.1).

- the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - by Emilian-4 participants on Romagnol-5 stimuli and
 - o by Tuscan-6 participants on Romagnol-5 stimuli,
- *i.* with the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - by Piedmontese-3 participants on Emilian-4 stimuli, and
 - by Romagnol-5 participants on Emilian-4 stimuli,
- *ii.* and with the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - o by Occitan-1 participants on Piedmontese-3 stimuli, and
 - o by Emilian-4 participants on Piedmontese-3 stimuli.⁴⁰

Note that in bullet point *ii*, similarly to what has already been done when testing Prediction 1, the expected—but unusable—intelligibility scores obtained by the trilingual *Occitan-2* participants on Piedmontese-3 stimuli will be replaced by intelligibility scores obtained by *Occitan-1* participants on Piedmontese-3 stimuli.

4.3. Results

In order to facilitate the reading, I inserted the letters A and B in the section numbering of chain A and chain B results sections. Given the identical structure of the two chains (both are a sequence of 1 Occitan of France, 1 Occitan of Italy, 3 Gallo-"Italic" and 1 Tuscan data points), inserting the letters A and B is expected to help in comparing each test or comparison conducted in chain A with the test or comparison conducted in the analogous position of chain B. Section 4.3.A presents the descriptive and inferential statistics for the chain A study. Section 4.3.B presents the descriptive and the inferential statistics for the chain B study.

For all statistical tests an alpha level of .05 was used.

⁴⁰ For the sake of formal completeness, in future research, some other tests and comparisons could be conducted which would complement the tests and comparisons presented in bullet points *ii*, and *iii* above (see Section 6.2.1.5).

4.3.*A*. CHAIN *A*

Section 4.3.*A*.1 presents the descriptive statistics and estimates for intelligibility scores; Section 4.3.*A*.2 controls for gender of voice (namely the gender of the speakers who produced the stimuli); Section 4.3.*A*.3 controls for participant gender. Section 4.3.*A*.4 presents and checks the potential effect of the other control variables, namely foreign language and Latin language competence, contact with target areas, exposure to target languages and attitudes towards target areas and target languages. In Section 4.3.*A*.5 the inferential statistics useful to compare the intelligibility scores will be presented (i.e., the post-Wartburg hypothesis will be tested). Finally, Section 4.3.*A*.6. presents a preliminary discussion (limited to chain *A* results).

Data corresponding to the filler items/geolects were removed from the statistical analyses. Therefore, the descriptive statistics and results only concerning the three experimental data points tested (i.e., Occitan-1, Piedmontese-3, Emilian-4, see Section 4.2.1.1 above) were reported in the body of the text, in tables and figures for stimuli 'at east'.

4.3.*A*.1. INTELLIGIBILITY SCORES – DESCRIPTIVE STATISTICS AND ESTIMATES

Table 4.11 provides the mean percentage intelligibility score for each data point and the corresponding estimates of population means (95% confidence interval for mean).

	Stimuli				
	Occitan-1	Occitan-2	Piedmontese-3	Emilian-4	Romagnol-5
Participants	-	51.93	55.21	-	-
Occitan-1		45.86-58.07	46.86-63.50		
		1.272	1.737		
Occitan-2	66.36	-	-	-	-
	62.86-69.86				
	1.160				
Piedmontese-3	-	52.07	-	85.43	-
		49.36-54.86		79.71-91.14	
		.908		1.899	
Emilian-4	-	-	78.00	-	83.93
			74.64-81.29		79.43-88.43
			1.100		1.482
Romagnol-5	-	-	-	83.36	-
				78.93-87.79	
				1.465	
Tuscan-6	-	-	-	-	36.64
					31.79-41.43
					1.597

Table 4.11. Mean percentage intelligibility scores, percent confidence interval (95%) and SD.

Table 4.12 below provides the means of raw intelligibility scores for each data point out of 14 correct responses possible (the test included 14 stimuli for each of the two target geolects; see Section 4.2.2.2.5), the respective estimates of population means (95% confidence interval for mean), and the min-max values.

	Stimuli Occitan-1	Occitan-2	Piedmontese-3	Emilian-4	Romagnol-5
Participants Occitan-1	-	7.27 6.42-8.13 6-10	7.73 6.56-8.89 6-11	-	-
Occitan-2	9.29 8.80-9.78 7-12	-	-	-	-
Piedmontese-3	-	7.29 6.91-7.68 6-9	-	11.96 11.16-12.76 8-14	-
Emilian-4	-	-	10.92 10.45-11.38 9-13	-	11.75 11.12-12.38 8-14
Romagnol-5	-	-	-	11.67 11.05-12.29 8-14	-
Tuscan-6	-	-	-	-	5.13 4.45-5.80 2-8

 Table 4.12. Intelligibility mean scores (out of 14 stimuli), confidence interval for mean (95%) and min-max.

Figures 4.7 and 4.8 below are an alternative way of displaying the results shown above.



Figure 4.7. Intelligibility scores on stimuli 'at west' (out of 14 stimuli). The small circle indicates the outlier value scored by participants n. 87 and 99, according to the numbering that identifies each of the 131 participants in the entire chain A.



Figure 4.8. Intelligibility scores on stimuli 'at east' (out of 14 stimuli). The small circles indicate outlier values scored by participants n. 11, 37 and 41, according to the numbering that identifies each of the 131 participants in the entire chain A.

The boxplots in Figures 4.7 and 4.8 above reveal the presence of five outlier values (indicated by small circles). These correspond to participants 11, 37, 41, 87 and 99, according to the numbering that identifies each of the 131 participants within the entire chain A.

4.3.A.2. CONTROLLING FOR GENDER OF VOICE

In order to control for gender of voice (i.e., the gender of the speakers who produced the stimuli⁴¹) the potential effect of gender on intelligibility scores was checked. However, this was possible for only 4 of the 5 target geolects⁴², since in the Occitan-1 locality it was not possible to find a female native speaker of the local geolect (Occitan of France), meaning that the stimulus sentences were produced by two male speakers. Therefore, when I checked whether gender of voice had an effect on intelligibility scores, I had to exclude the intelligibility scores of the Occitan-2 participants. This is the only group of participants that was required to listen to Occitan-1 stimuli. This represents a limitation of this study, in that the data obtained from Occitan-2 participants on the Occitan-1 target geolect could not be controlled for gender of voice (see Section 6.1.2.2 in Limitations).

As far as the other target geolects are concerned, I checked whether the gender of voice had an effect on intelligibility scores, which would indicate whether the stimuli could be treated as belonging to one single set.

The null hypothesis (H_0) is that there is no difference between

- intelligibility score obtained on male voices (namely on stimuli produced by the male speakers), and
- intelligibility score obtained on female voices (namely on stimuli produced by the female speakers).

The alternative hypothesis (H₁) is that there is difference between those intelligibility scores.

H₀: score on male voices = score on female voices,

H₁: score on male voices \neq score on female voices.

⁴¹ As presented in Section 4.2.2.2.4. (in Method), for each target geolect an equal number of stimulus sentences should have ideally been produced by a male and a female speaker, and included in each of the four acoustic lists obtained by the Latin square design (see Section 4.2.2.2.6).

⁴² Remember that the sentences were not translated into Tuscan-6 geolect (see Section 4.2.2.2.3). Therefore, while the data were collected in all 6 localities of the chain, stimuli translation and recording were produced in only 5 localities.

A Shapiro-Wilk test of normality was conducted for both the set of intelligibility scores obtained on the male voices and the set of intelligibility scores obtained on the female voices. The distribution resulted statistically significantly different from a normal distribution for both the male voices (W(107) = .934; p < .001) and the female voices (W(107) = .958; p = .002).

These findings indicated that a non-parametric test of significance should be conducted on the data.

A Wilcoxon Signed-Rank two-related-samples test was therefore conducted. No significant difference was found between the two sets of scores obtained respectively on the male voices and on the female voices (Z = -1.806, p = .071, ns).

Figure 4.9 displays the intelligibility scores on male voice and on female voice.



Figure 4.9. Intelligibility scores on male voice and on female voice, out of 14 stimuli for each gender of voice. The small circles indicate outlier values scored by participants n. 124 and 128, according to the numbering that identifies each of the 131 participants in the entire chain A.

Based on these results, no evidence was found that gender of voice had an effect on intelligibility score. The null hypothesis (H_0) could not be rejected. Therefore, the scores obtained on male voice and the scores obtained on female voice were collapsed into a single set of scores.

4.3.A.3. CONTROLLING FOR PARTICIPANT GENDER

In order to control for participant gender, I checked whether it had an effect on intelligibility scores (see Section 4.1.4 and 4.2.3.1). The results would indicate whether to treat male and female participants of each data point as one single group or as two distinct groups.

The null hypothesis (H_0) is that there is no difference in performance between male participants and female participants. The alternative hypothesis (H_1) is that there is such difference.

H₀: male participants' intelligibility score = female participants' intelligibility score

H₁: male participants' intelligibility score \neq female participants' intelligibility score.

A Shapiro-Wilk test of normality was conducted for male participants' intelligibility scores and for female participants' intelligibility scores. The resulting distribution was statistically significantly different from a normal distribution for both the male participants (W(68) = .912, p < .001) and the female participants (W(63) = .906, p < .001).

These findings indicated that a non-parametric test of significance should be conducted on the data.

A Mann-Whitney U two-independent-samples test was therefore conducted. No significant difference was found between the two sets of scores obtained by male and female participants (U = 1909.5; p = .282, ns).



Figure 4.10 below displays the intelligibility scores of male and female participants.

Figure 4.10. Intelligibility scores (on stimuli 'at west' and stimuli 'at east' combined) of male and female participants, out of 28 total stimuli.

Based on these results, no evidence was found that participant gender had an effect on intelligibility score. The null hypothesis could not be rejected. Therefore, scores of male participants and scores of female participants were collapsed into a single set of scores in the following tests and calculations.

4.3.A.4. CONTROL VARIABLES

In order to control for the variables presented in Section 4.2.2.1 (corresponding to questions 1, 2, 5, 6, 7, 8 and 9 of the questionnaire), a multiple regression analysis was run. The purpose of the analysis was to check whether these variables had an effect on the intelligibility score. One regression was run with scores on stimuli 'at west' and one with scores on stimuli 'at east', both because questions 5, 6, 7, 8 and 9 asked for separate responses concerning area/language 'at east' and area/language 'at east', and because for three data points out of six stimuli 'at east' were fillers, excluded from the statistical analysis. The multiple regressions were run while controlling for 'data point'⁴³. Scores for *foreign language competence* are described in Section 4.3.*A*.4.1; scores for *Latin language competence* are described in Section 4.3.*A*.4.3; scores for *exposure to target languages* are described in Section 4.3.*A*.4.6.

4.3.A.4.1. FOREIGN LANGUAGE COMPETENCE – QUESTION 1

Results show that 43.51% of participants did not know any foreign language; 41.98% knew only one foreign language (48 participants know French, 25 English, 1 German); 13.74% knew a second foreign language (13 participants know French, 4 English, 1 Spanish, 1 German besides another foreign language); and .76% knew a third foreign language (1 French citizen knows Italian besides other two foreign languages). French was known by 61 participants; English was known by 29 participants; German was known by 2 participants; Spanish was known by 1 participant; and Italian was known by 1 (French citizen) participant. 57 participants do not know any foreign language.

⁴³ See Section 4.2.5.2 for a presentation of the independent variable 'data point'. Please remember that each data point corresponds to a different participants' native geolect, and to two different target geolects, respectively 'at west' and 'at east'. Therefore, running the multiple regressions without controlling for 'data point' would have made 'data point' act as confounding variable.

Figures 4.11, 4.12, and 4.13 show foreign language knowledge and competence of participants for each of the five levels of competence (i.e. none, school, elementary, intermediate, and advanced). The three graphs refer to foreign language 1, foreign language 2 and foreign language 3 respectively.



Figure 4.11. Foreign language 1 competence. Percentage distribution of foreign languages known by competence level: none, school, elementary, intermediate, advanced.



Figure 4.12. Foreign language 2 competence. Percentage distribution of foreign languages known by competence level: none, school, elementary, intermediate, advanced.



Figure 4.13. Foreign language 3 competence. Percentage distribution of foreign languages known by competence level: none, school, elementary, intermediate, advanced.

Table 4.13. gives an overall picture of the number and type of foreign languages participants reported knowing.

	Foreign language 1	Foreign language 2	Foreign language 3
none	57 (43.51%)	112 (85.50)	130 (99.24)
French	48 (36.64)	13 (9.92)	-
English	25 (19.08)	4 (3.05)	-
German	1 (.76)	1 (.76)	-
Spanish	-	1 (.76)	-
Italian	-	-	1 (.76)
	131 (100.00)	131 (100.00)	131 (100.00)

Table 4.13. Distribution and (percent distribution) of foreign languages known for each of the three foreign languages.

Table 4.14 below gives an overall picture of the distribution of the levels of foreign language competence.

	Foreign language 1	Foreign language 2	Foreign language 3
none	57 (43.51%)	112 (85.50)	130 (99.24)
school level	63 (48.09)	16 (12.21)	-
elementary	5 (3.82)	1 (.76)	-
intermediate	3 (2.29)	1 (.76)	-
advanced	3 (2.29)	1 (.76)	1 (.76)
	131 (100.00)	131 (100.00)	131 (100.00)

Table 4.14. Distribution and (percent distribution) of foreign language competence levels (none, school, elementary, intermediate, advanced), for each of the three foreign languages.

On a five-point rating scale (0-4), for foreign language 1 the mean competence was M = .72 (SD = .835); for foreign language 2 M = .19 (SD = .556); for foreign language 3 M = .03 (SD = .349).

4.3.A.4.2. LATIN LANGUAGE COMPETENCE – QUESTION 2

Figure 4.14. below shows the percentage of participants reporting knowledge of Latin for each of the four levels of competence (i.e. none, basic, good, very good).



Figure 4.14. Latin language competence. Percentage distribution of Latin language competence levels: none, basic, good, very good.

The distribution of Latin language competence scores is also displayed in Table 4.15.

None	98 (74.81%)
basic	28 (21.37)
good	4 (3.06)
very good	1 (.76)
	131 (100.00)

 Table 4.15. Distribution and percent distribution of Latin language competence.

On a four-point rating scale (0-3), the mean Latin language competence was M = .30 (SD = .564).

4.3.A.4.3. CONTACT WITH TARGET AREAS – QUESTION 5

Figures 4.15 and 4.16 summarize participants' responses to question 5, which concerns contact with target areas: on a scale from 1 (never/rarely) to 4 (very often), "how often have you been to [the target area 'at west']? And to [the target area 'at east']?"



Figure 4.15. Question 5: *contact* with target area 'at west'. On a scale from 1 to 4, "how often have you been to [the target area 'at west']?"



Figure 4.16. Question 5: *contact* with target area 'at east'. On a scale from 1 to 4, "how often have you been to [the target area 'at east']?" The asterisk indicates the extreme outlier value scored by participants n. 62, 64, 67 and 77, according to the numbering that identifies each of the 131 participants in the entire chain A.

1 abies 4.10 and 4.17 below are two anothative ways of displaying the data above	Tables 4.16 and 4.17 below	are two alternative ways	of displaying the data above.
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	Participants						
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5	Tuscan-6	
Target area 'at west'	1.45 .522 1-2	1.63 .576 1-3	2.75 .608 2-4	1.00 .000 1-1	1.29 .464 1-2	1.79 .658 1-3	
Target area 'at east'	2.36 .809 1-4	filler	1.00 .000 1-1	1.21 .415 1-2	filler	filler	

Table 4.16. Question 5: *contact* with target areas, on a scale from 1 (no/scarce contact) to 4 (much contact). Mean score, *SD*, min-max. The data points are displayed in order from 'west' to 'east'.

	Target area Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5
Participants Occitan-1	-	2.36 .809 1-4	1.45 .522 1-2	-	-
Occitan-2	1.63 .576 1-3	-	filler	-	-
Piedmon3	-	2.75 .608 2-4	-	1.00 .000 1-1	-

Emilian-4	-	-	1.00	-	1.21
			.000		.415
			1-1		1-2
Romagnol-5	-	-	filler	1.29	-
				.464	
				1-2	
Tuscan-6	-	-	-	filler	1.79
					.658
					1-3

Table 4.17. Question 5: *contact* with target areas. On a scale from 1 to 4, "how often have you been to [the target areas]?" Mean score, *SD*, min-max.

Most score means were in the low range: 7 means out of 9 were between 1.00 ('never/rarely') and 1.79 (less then 'sometimes'). For Occitan-1 participants, contact mean with area 'at east' (Occitan-2) is slightly higher then 2.00 (2.36). This is reasonable due to the tourism of French citizens in the nearby administratively Italian Alps, as reported by the participants themselves. For Piedmontese-3 participants, mean score for contact with the Occitan-2 area (the Occitan area of Italy) was 2.75 ('more than sometimes'), supposedly due to the intra-regional mountain tourism of lowlands Piedmontese people, as reported by the participants themselves. It should be kept in mind that the localities in the chain are rather close to one another (see Figure 4.2 in Section 4.2.1). Especially across the Alps and the Apennines, the adjacent localities in the chain are situated only about 50 kilometres from one another by road, or 40 kilometres as the crow flies. Therefore, the required test condition of 'low contact' between the participants and their target areas-where the two adjacent localities in the chain are situated—could be only partially satisfied. This characteristic and the fact that the distance between the adjacent data points was not constant in the chain risked rendering the scores of the various groups of participants incomparable. It was therefore necessary to check whether contact with target area had an effect on intelligibility (see the results of the multiple regression analyses, Section 4.3.A.4.6.5).

4.3.A.4.4. EXPOSURE TO TARGET LANGUAGES – QUESTION 6

Figures 4.17 and 4.18 below summarize participants' responses to question 6, concerning exposure to target languages, which asked participants to indicate on a scale from 1 (never/rarely) to 4 (very often), "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at west']? And a dialect of [the target language at east]?"



Figure 4.17. Question 6: *exposure* to target language 'at west'. On a scale from 1 to 4, "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at west']?" The asterisks indicate extreme outlier values scored by participants n. 16, 30, 42, 49, 53 and 57, according to the numbering that identifies each of the 131 participants in the entire chain A.



Figure 4.18. Question 6: *exposure* to target language 'at east'. On a scale from 1 to 4, "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at east']?" The asterisks indicate extreme outlier values scored by participants n. 2, 9, 62, 67 and 68, according to the numbering that identifies each of the 131 participants in the entire chain A.

Tables 4.18 and 4.19 present the data above in different formats.

	Participants						
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5	Tuscan-6	
Target language 'at west'	1.00 .00 1-1	1.13 .338 1-2	1.21 .415 1-2	1.00 .000 1-1	1.38 .495 1-2	1.71 .690 1-3	
Target language 'at east'	1.36 .924 1-4	filler	1.00 .000 1-1	1.17 .381 1-2	filler	filler	

Table 4.18.	Question 6:	<i>exposure</i> to	target lang	uages, on a	scale from 1	(no/scarce	familiarity) to	4 (much
familiarity).	Mean score,	SD, min-ma	ax. The data	points are d	isplayed in or	der from 'w	vest' to 'east'.	

	Target language				
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5
Participants	-	1.36	1.00	-	-
Occitan-1		.924	.000		
		1-4	1-1		
Occitan-2	1.13	-	filler	-	-
	.338				
	1-2				
Piedmon3	-	1.21	-	1.00	-
		.415		.000	
		1-2		1-1	
Emilian-4	-	-	1.00	-	1.17
			.000		.381
			1-1		1-2
Romagnol-5	-	-	filler	1.38	-
_				.495	
				1-2	
Tuscan-6	-	-	-	filler	1.71
					.690
					1-3

Table 4.19. Question 6: *exposure* to target languages, on a scale from 1 (no/scarce familiarity) to 4 (much familiarity). Mean score, *SD*, min-max.

All score means fell in the low range, ranging between 1.00 ('never/rarely') and 1.71 (less than 'sometimes').

4.3.A.4.5. ATTITUDES – QUESTIONS 7, 8 AND 9

QUESTION 7. Figures 4.19 and 4.20 below summarize participants' responses to question 7, which concerned attitude towards target areas and asked: on a scale from 1 (not at all) to 5 (very much), "how would you like to live in [the target area 'at west']? And in [the target area 'at east']?"



Figure 4.19. Question 7: *attitude* towards target area 'at west'. On a scale from 1 to 5, "how would you like to live in [the target area 'at west']?" The small circles and the asterisk indicate outlier and extreme outlier values respectively, scored by participants n. 63, 64, 67, 76 and 116, according to the numbering that identifies each of the 131 participants in the entire chain A.



Figure 4.20. Question 7: *attitude* towards target area 'at east'. On a scale from 1 to 5, "how would you like to live in [the target area 'at east']?" The small circle indicates an outlier value scored by participant n. 2, according to the numbering that identifies each of the 131 participants in the entire chain A.

Tables 4.20 and 4.21 display the data above in different formats.

	Participants						
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagn5	Tuscan-6	
Target area 'at west'	2.82 1.328 1-4	2.96 1.042 1-4	2.92 1.248 1-5	2.00 .780 1-4	2.92 1.100 1-5	3.42 .881 1-5	
Target area 'at east'	3.45 1.128 1-5	filler	2.42 1.060 1-4	2.54 1.141 1-4	filler	filler	

Table 4.20	. Question 7: attitud	e towards the targe	et areas, on a sca	le from 1 (most	negative attitude) to 5 (most
positive at	titude). Mean score,	SD, min-max. The	data points are o	displayed in orde	er from 'west' to	'east'.

	Target area	Occiter 2	Distance 2	Emilian 4	D
	Occitan-1	Occitan-2	Pleamon3	Emilian-4	Romagnol-5
Participants	-	3.45	2.82	-	-
Occitan-1		1.128	1.328		
		1-5	1-4		
Occitan-2	2.96	-	filler	-	-
	1.042				
	1-4				
Piedmon3	-	2.92	-	2.42	-
		1.248		1.060	
		1-5		1-4	
Emilian-4	-	-	2.00	-	2.54
			.780		1.141
			1-4		1-4
Romagnol-5	-	-	filler	2.92	-
				1.100	
				1-5	
Tuscan-6	-	-	-	filler	3.42
					.881
					1-5

Table 4.21. Question 7: *attitude* towards the target areas, on a scale from 1 (most negative attitude) to 5 (most positive attitude). Mean score, *SD*, min-max.

Most score means were in the low-middle range: 7 means out of 9 fell between 2.0 and 2.96. Participants from the Occitan-1 (Fr) and Tuscan-6 localities (the two extreme data points in the chain) scored 3.45 and 3.42 respectively.

QUESTION 8. Figures 4.21 and 4.22 below summarize participants' responses to question 8, concerning attitude towards target languages: on a scale from 1 (horrible) to 5 (very beautiful), "how beautiful do the dialects of [the target language 'at west'] sound to you? And the dialects of [the target language 'at east']?"







Figure 4.22. Question 8: *attitude* towards target language 'at east'. On a scale from 1 to 5, "how beautiful do the dialects of [the target language 'at east'] sound to you?"

Tables 4.22 and 4.23 below are two alternative ways of displaying the data above.
	Participants							
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagn5	Tuscan-6		
Target language 'at west'	3.36 .505 3-4	3.46 .658 2-5	3.71 .751 3-5	3.13 .680 2-4	3.46 .779 2-5	4.04 .624 2-5		
Target language 'at east'	3.64 .674 3-5	filler	3.67 .761 2-5	3.71 .624 3-5	filler	filler		

 Table 4.22. Question 8: attitude towards the target languages, on a scale from 1 (horrible) to 5 (very beautiful).

 Mean, SD, min-max. The data points are displayed in order from 'west' to 'east'.

	Target language	Occitan-2	Piedmon -3	Emilian_4	Romagnol_5
Participants Occitan-1	-	3.64 .674 3-5	3.36 .505 3-4	-	-
Occitan-2	3.46 .658 2-5	-	filler	-	-
Piedmon3	-	3.71 .751 3-5	-	3.67 .761 2-5	-
Emilian-4	-	-	3.13 .680 2-4	-	3.71 .624 3-5
Romagnol-5	-	-	filler	3.46 .779 2-5	-
Tuscan-6	-	-	-	filler	4.04 .624 2-5

 Table 4.23. Question 8: attitude towards the target languages, on a scale from 1 (horrible) to 5 (very beautiful).

 Mean, SD, min-max.

Most score means were in the middle-high range: 8 means out of 9 fell between 3.13 and 3.71. Tuscan-6 participants scored 4.04.

QUESTION 9. Figures 4.23 and 4.24 below summarize participants' responses to question 9, which addressed the behavioural component of language attitude (see Schoel et al., 2013): on a scale from 1 (not at all) to 5 (very much), "how would you like to speak a dialect of [the target language 'at west']? And a dialect of [the target language 'at east']".



Figure 4.23. Question 9: *attitude* towards target language 'at west'. On a scale from 1 to 5, "how would you like to speak a dialect of [the target language 'at west']?" The small circles and the asterisks indicate outlier and extreme outlier values respectively, scored by participants n. 9, 41, 85, 129, 113, 115, 116, 118, 119 and 129, according to the numbering that identifies each of the 131 participants in the entire chain A.



Figure 4.24. Question 9: *attitude* towards target language 'at east'. On a scale from 1 to 5, "how would you like to speak a dialect of [the target language 'at east']?" The small circle and the asterisks indicate outlier and extreme outlier values respectively, scored by participants n. 1, 8, 9, 10, 80 and 82, according to the numbering that identifies each of the 131 participants in the entire chain A.

Tables 4.24 and 4.25 represent the data above in different ways.

	Participants							
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagn5	Tuscan-6		
Target language 'at west'	3.27 1.009 2-5	3.38 .824 2-5	3.54 .977 1-5	2.83 .917 1-4	3.38 .924 1-5	3.75 .897 1-5		
Target language 'at east'	4.00 .632 3-5	filler	3.21 .932 1-4	3.50 1.103 1-5	filler	filler		

Table 4.24. Question 9: attitudes towards the target languages, on a scale from 1 (not at all) to 5 (very much).
Mean score, SD, min-max. The data points are displayed in order from 'west' to 'east'.

			1		
	Target language	Oppitan 2	Diadman 2	Emilian 4	Domoor ol 5
	Occitan-1	Occitan-2	Pleamon3	Emilian-4	Romagnol-5
Participants	-	4.00	3.27	-	-
Occitan-1		.632	1.009		
		3-5	2-5		
Occitan-2	3.38	-	filler	-	-
	.824				
	2-5				
Piedmon3	-	3.54	-	3.21	-
		.977		.932	
		1-5		1-4	
Emilian-4	-	-	2.83	-	3.50
			.917		1.103
			1-4		1-5
Romagnol-5	-	-	filler	3.38	-
_				.924	
				1-5	
Tuscan-6	-	-	-	filler	3.75
					.897
					1-5

Table 4.25. Question 9: *attitudes* towards the target languages, on a scale from 1 (not at all) to 5 (very much). Mean score, *SD*, min-max.

Just as for the previous question equally concerning attitudes towards the target languages, most score means for this question were in the middle-high range: 12 means out of 12 fell between 2.83 and 4.00.

4.3.A.4.6. CONTROL VARIABLES: MULTIPLE REGRESSION ANALYSIS

In order to control for the seven variables⁴⁴ presented above, I checked whether they had an effect on intelligibility score. I did this by means of two distinct multiple regressions, one using scores on stimuli 'at west' as the dependent variable, the other using scores on stimuli 'at east' as the dependent variable. As shown above (Section 4.3.4.4), I ran two independent multiple regressions because each participant was asked separate questions about area/language 'at west' and area/language 'at east'. The potential effect of the control variables should be checked while controlling for 'data point'. This because each data point corresponds to a different participant's native geolect, and to two different target geolects, respectively 'at west' and 'at east'. Therefore, running the multiple regressions without controlling for 'data point' would have made 'data point' act as confounding variable (see Section 4.3.4.4, footnote 43). 'Data point' was a nominal variable with as many values as the number of data points having an experimental target geolect (i.e., it was not a filler geolect). Therefore, for the multiple regression with scores 'at west', 'data point' had six values, since this was the number of data points having an experimental target geolect 'at west'. namely Occitan-1, Occitan-2, Piedmontese-3, Emilian-4, Romagnol-5, and Tuscan-6. On the other hand, for the multiple regression with scores 'at east', 'data point' only had three values, corresponding to Occitan-1, Piedmontese-3 and Emilian-4, since geolect 'at east' was a filler for the other three data points. It turns out that nominal variables with more than 2 values cannot be entered into multiple regression directly; rather they have to be transformed into as many dummy variables as the number of the values that they can take⁴⁵ (i.e., in this case, as the number of data points having an *experimental* target geolect). Therefore, I created 6 dummy variables for the regression with scores 'at west', and 3 dummy variables for the regression with scores 'at east'. Then, following standard procedure, 5 (i.e. 6 minus 1) and 2 (i.e. 3 minus 1) dummy variables were entered in the respective regression analysis (since the 6th and the 3rd dummy variables respectively would have been redundant with respect to the other dummy variables).

⁴⁴ Beside gender of voice and participant gender, whose potential effect was already tested for above (Sections 4.3.*A*.2 and 4.3.*A*.3).

⁴⁵ See UCLA (University of California Los Angeles) web page *Introduction to regression with SPSS lesson 3: SPSS regressions with categorical predictors* <u>https://stats.oarc.ucla.edu/spss/seminars/introduction-to-regression-with-spss/introreg-lesson3/</u>. See also a tutorial video by H. Michael Crowson, University of Oklahoma: <u>https://www.youtube.com/watch?v=XGlbGaOsV9U</u>.

For each multiple regression, null hypotheses were formulated as well as alternative hypotheses.

The *main* null hypothesis (H_01) is that there is no relationship between the intelligibility score and the control variables as a whole (i.e. the model). The alternative hypothesis (H_11) is that there is such a relationship.

- H_0 1: There is no relationship between intelligibility score and foreign language competence, Latin language competence, contact with target areas, exposure to target languages, and attitudes towards target areas and languages.
- H₁ 1: There is a relationship between intelligibility score and the control variables listed above.

A separate null hypothesis was also formulated for each of the seven control variables. The null hypothesis may be stated as saying that in the presence of all other control variables, there is no relationship between intelligibility score and any of the following:

- *foreign language competence* (H₀2*a*);
- *Latin language competence* (H₀ 2*b*);
- *contact with target area* (H₀2*c*);
- *exposure to target language* (H₀2*d*);
- *attitudes towards target area* (H₀2*e*);
- *attitudes towards target language* (elicited by question 8) (H₀ 2*f*);
- *'behavioural' attitudes towards target language* (elicited by question 9) (H₀ 2g).

For each of the null hypotheses above, an alternative hypothesis was formulated:

• H₁ 2(*a-g*): In the presence of all other control variables, there is a relationship between intelligibility score and [the control variable concerned].

First, the assumptions of multiple regression (i.e., *i.* absence of outliers, *ii*. collinearity of data, *iii*. independence of errors, *iv*. random normal distribution of errors, *v*. homoscedasticity, *vi*. linearity of data, and *vii*. non-zero variances) were tested separately for:

- intelligibility score on stimuli 'at west' as dependent variable (in section 4.3.A.4.6.1), and
- *intelligibility score on stimuli 'at east'* as dependent variable (in section 4.3.4.4.6.2).

4.3.A.4.6.1. Testing the assumptions of multiple regression with intelligibility score on stimuli 'at west' as dependent variable

i. An analysis of standard residuals was carried out, which showed that the data contained no outliers. The Minimum Standardised Residual value was greater than -3.29 and the Maximum Standardised Residual value was smaller than 3.29 (Std. Residual Min = -3.042; Std. Residual Max = 2.592).

ii. As shown in Table 4.26, the data met the assumption of *collinearity*. The Tolerance values were not smaller than .1 and the Variance Inflation Factor values (VIF) were not greater than 10:

	Tolerance	VIF
Foreign language 1 competence	.504	1.982
Foreign language 2 competence	.350	2.860
Foreign language 3 competence	.495	2.020
Latin language competence	.743	1.346
Contact with target area 'at west'	.394	2.536
Exposure to target language 'at west'	.639	1.566
Attitude towards target area 'at west'	.649	1.541
Attitude towards target language 'at west' (Q8)	.660	1.515
Attitude towards target language 'at west' (Q9)	.570	1.755

Table 4.26. Testing the *collinearity of data* assumption: Tolerance and Variance Inflation Factor (VIF) values of the control variables and 'data point' (independent) variable, with score on stimuli 'at west' as the dependent variable.

iii. The data also met the assumption of *independence of errors*, as the Durbin-Watson value was between 1 and 3, being rather close to 2 (Durbin-Watson value = 2.368).

iv. The histogram of standardised residuals (reported in Figure 4.25 below) indicated that the data contained *normally distributed errors*, as did the normal P-P plot of standardised residuals (reported in Figure 4.26), which showed dots that, albeit not completely on the line, were close to it.



Figure 4.25. Testing the *normal distribution of errors* assumption: Regression Standardized Residual with score on stimuli 'at west' as dependent variable.



Figure 4.26. Testing the *normal distribution of errors* assumption: Regression Standardized Residual with score on stimuli 'at west' as dependent variable.

v. - vi. The scatterplot of standardised predicted values reported in Figure 4.27 shows that the data met the assumptions of *homogeneity of variance* and *linearity*.



Figure 4.27. Testing the *homogeneity of variance* and *linearity* assumptions: Regression Standardized Residual Value with score on stimuli 'at west' as dependent variable.

vii. As shown in Table 4.27, the data also met the assumption of *non-zero variances*, as all the Variance values were greater than zero:

	Variance
Score on stimuli 'at west'	7.059
Foreign language 1 competence	.697
Foreign language 2 competence	.309
Foreign language 3 competence	.122
Latin language competence	.318
Contact with target area 'at west'	.591
Exposure to target language 'at west'	.240
Attitude towards target area 'at west'	1.259
Attitude towards target language 'at west' (Q8)	.542
Attitude towards target language 'at west' (Q9)	.859

 Table 4.27. Testing the non-zero variance assumption: Variance values with score on stimuli 'at west' as dependent variable.

4.3.A.4.6.2. Testing the assumptions of multiple regression with intelligibility score on stimuli 'AT EAST' AS DEPENDENT VARIABLE

i. An analysis of standard residuals was carried out. The analysis showed that the data contained no outliers. The Minimum Standardised Residual value was greater than -3.29 and the Maximum Standardised Residual value was smaller than 3.29 (Std. Residual Min = -2.223, Std. Residual Max = 1.667).

ii. As shown in Table 4.28 below, the data met the assumption of collinearity. The Tolerance values were not smaller than .1 and the Variance Inflation Factor values (VIF) were not greater than 10:

	Tolerance	VIF
Foreign language 1 competence	.325	3.080
Foreign language 2 competence	.189	5.288
Foreign language 3 competence	.185	5.409
Latin language competence	.596	1.677
Contact with target area 'at east'	.243	4.118
Exposure to target language 'at east'	.277	3.606
Attitude towards target area 'at east'	.603	1.660
Attitude towards target language 'at east' (Q8)	.736	1.358
Attitude towards target language 'at east' (Q9)	.681	1.468

 Table 4.28. Testing for collinearity of data: Tolerance and Variance Inflation Factor (VIF) values of the control variables and 'data point' (independent) variable with score on stimuli 'at east' as dependent variable.

iii. The data also met the assumption of independence of errors, as the Durbin-Watson value was between 1 and 3, and very close to 2 (Durbin-Watson value = 2.099).

iv. The histogram of standardised residuals reported in Figure 4.28 indicated that the data contained approximately normally distributed errors, as did the normal P-P plot of standardised residuals reported in Figure 4.29, which showed dots that, although not completely on the line, were close to it.



Figure 4.28. Testing for *normal distribution of errors*: Regression Standardized Residual with score on stimuli 'at east' as dependent variable.



Figure 4.29. Testing for *normal distribution of errors*: Regression Standardized Residual with score on stimuli 'at east' as dependent variable.

v. - vi. The scatterplot of standardised predicted values reported in Figure 4.30 shows that the data met the assumptions of homogeneity of variance and linearity.



Figure 4.30. Testing for *homogeneity of variance* and *linearity*: Regression Standardized Residual Value, with score on stimuli 'at east' as dependent variable.

vii. As shown in Table 4.29, the data also met the assumption of non-zero variances, as all the Variance values were greater than zero:

	Variance
Score on stimuli 'at east'	11.00
Foreign language 1 competence	.63
Foreign language 2 competence	.15
Foreign language 3 competence	.07
Latin language competence	.24
Contact with target area 'at east'	1.34
Exposure to target language 'at east'	1.14
Attitude towards target area 'at east'	2.66
Attitude towards target language 'at east' (Q8)	3.68
Attitude towards target language 'at east' (Q9)	3.47

 Table 4.29. Testing for non-zero variance: Variance values with score on stimuli

 'at east' as dependent variable.

The tests reported above indicate that all the assumptions of multiple regression were met for both designs, namely:

- with *intelligibility score on stimuli 'at west'* as dependent variable, and
- with *intelligibility score on stimuli 'at east'* as dependent variable.

Therefore, two multiple regressions were run to see whether the control variables had an effect on intelligibility score.

4.3.A.4.6.3. MULTIPLE REGRESSION WITH 'INTELLIGIBILITY SCORE ON STIMULI AT WEST' AS DEPENDENT VARIABLE. A multiple regression was conducted on the seven control variables while controlling for 'data point'. Using the 'enter' method, it was found that the model explains a significant amount of the variance in the intelligibility score ($F(14, 116) = 31.497, p < .001, R^2 = .792, R^2$ Adjusted = .767).

The analysis also shows that 'data point' alone had an effect on intelligibility score, explaining a significant amount of the variance in the intelligibility score ($F(5, 125) = 81.265, p < .001, R^2 = .765, R^2 \text{ Adjusted} = .755$). There is no evidence that any of the control variables individually had an effect on intelligibility score (see Table 4.30 below):

Control variable	Beta	t	Sig.
Foreign language 1 competence	080	-1.334	.185
Foreign language 2 competence	.125	1.744	.084
Foreign language 3 competence	.084	1.394	.166
Latin language competence	.040	.804	.423
Contact with target area 'at west'	082	-1.210	.229
Exposure to target language 'at west'	031	585	.560
Attitude towards target area 'at west'	047	896	.372
Attitude towards target language 'at west' (Q8)	062	-1.192	.236
Attitude towards target language 'at west' (Q9)	.060	1.071	.286

Table 4.30. Results of multiple regression with *intelligibility score on stimuli 'at west'* as dependent variable. *Beta*, *t* and *p* values.

4.3.A.4.6.4. MULTIPLE REGRESSION WITH 'INTELLIGIBILITY SCORE ON STIMULI AT EAST' AS DEPENDENT VARIABLE. A multiple regression was conducted on the seven control variables while controlling for 'data point'. Using the 'enter' method, it was found that the model explains a significant amount of the variance in the intelligibility score ($F(11, 47) = 6.588, p < .001, R^2 = .607, R^2 \text{ Adjusted} = .515$). The analysis also showed that 'data point' alone had an effect on intelligibility score, explaining a significant amount of the variance in the intelligibility score ($F(2, 56) = 35.245, p < .001, R^2 = .557, R^2 \text{ Adjusted} = .541$). There is no evidence that any of the control variables had individually an effect on intelligibility score (see Table 4.31 below):

Control variable	Beta	t	Sig.
Foreign language 1 competence	.140	.872	.388
Foreign language 2 competence	.005	.023	.982
Foreign language 3 competence	.128	.602	.550
Latin language competence	101	850	.399
Contact with target area 'at east'	.082	.444	.659
Exposure to target language 'at east'	330	-1.900	.064
Attitude towards target area 'at east'	.049	.417	.679
Attitude towards target language 'at east' (Q8)	.014	.134	.894
Attitude towards target language 'at east' (Q9)	.133	1.204	.235

Table 4.31. Results of multiple regression with *intelligibility score on stimuli 'at east'* as dependent variable. *Beta*, *t* and *p* values.

4.3.A.4.6.5. SUMMING UP RESULTS OF MULTIPLE REGRESSIONS. The results of both multiple regressions, namely with *intelligibility scores on stimuli 'at west'* as dependent variable, and with *intelligibility scores on stimuli 'at east'* as dependent variable, did not provide evidence that any of the control variables (language competence, contact with target area, exposure to target language, attitudes) affected individually intelligibility of target geolects. Therefore, these control variables will not be discussed any further.

4.3.A.5. COMPARING INTELLIGIBILITY SCORES

This section presents the results of the testing of the post-Wartburg hypothesis. Section 4.3.*A*.5.1 presents information about the calculation of the estimates of the population intelligibility mean scores. With reference to Prediction 1, in Section 4.3.*A*.5.2 the intelligibility scores across the

Apennines are compared with the intelligibility scores across the Occitan-Piedmontese border. With reference to Prediction 1-*a*, Section 4.3.*A*.5.3 compares the intelligibility scores across the Apennines with the intelligibility scores across the Alps. With reference to Prediction 2, Section 4.3.*A*.5.4 compares the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of 4.3.*A*.5.5 compares the intelligibility scores across the Apennines with the intelligibility scores across the Po valley and Romagna. Also with reference to Prediction 3^* , Section 4.3.*A*.5.6 compares the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of the difference of intelligibility scores across the Apennines with the magnitude of the difference of the difference of intelligibility scores across the Apennines with the magnitude of the difference of the difference of intelligibility scores across the Apennines with the magnitude of the difference of the difference of intelligibility scores across the Apennines across the Apennines with the magnitude of the difference of intelligibility scores across the Apennines across the Apennines with the magnitude of the difference of intelligibility scores across the Po valley and Romagna.

4.3.A.5.1. INTELLIGIBILITY ESTIMATES AND TESTS OF NORMALITY

Estimates of population intelligibility mean scores were calculated. The results already reported in Table 4.11 are reported again in Table 4.32 for the convenience of the reader.

	Stimuli Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5
Participant Occitan-1	-	51.93% 45.86-58.07	55.21 46.86-63.50	-	-
Occitan-2	66.36 62.86-69.86	-	filler	-	-
Piedmontese-3	-	52.07 49.36-54.86	-	85.43 79.71-91.14	-
Emilian-4	-	-	78.00 74.64-81.29	-	83.93 79.43-88.43
Romagnol-5	-	-	filler	83.36 78.93-87.79	-
Tuscan-6	-	-	-	filler	36.64 31.79-41.43

Table 4.32 (repeated from Table 4.11 for convenience). Mean percentage intelligibility scores and the respective estimates of population means (95% confidence interval for mean).

Figure 4.31 displays the intelligibility scores reported above, which are all the intelligibility scores related to the chain *A* study. Boxplot (*i*) corresponds to Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli.



Figure 4.31 (merging Figures 4.7 and 4.8). Boxplots for the intelligibility scores compared in chain A study, out of 14 stimuli. The small circles correspond to outlier values scored by participants n. 11 (b), 37 and 41 (e), 87 and 99 (h), according to the numbering that identifies each of the 131 participants in the entire chain A.

For convenience, Table 4.33 reports the results of the Shapiro-Wilk tests of normality for the intelligibility scores of all data points. These results were relevant when choosing the design of the various tests of significance that had to be run in testing the predictions made by the post-Wartburg hypothesis (and whose results in turn are presented in the following sections), since normal distribution of data, as well as equality of variance, is a necessary assumption of a parametric test of significance. Since both the sets of scores had a normal distribution, a Levene's test of equality of variance was run for the same sets of scores. Where both assumptions (normal distribution and equality of variance) were met, a parametric test of significance was run. In other cases, a non-parametric test of significance was run.

	Stimuli				
	Occitan-1	Occitan-2	Piedmon3	Emilian-4	Romagnol-5
Participant	-	.840* (11)	.882 (11)	-	-
Occitan-1		.031	.111 ns		
Occitan-2	.938 (24)	-	filler	-	-
	.146 ns				
Piedmontese-3	-	.881* (24)	-	.843* (24)	-
		.009		.002	
Emilian-4	-	-	.923 (24)	-	.928 (24)
			.069 ns		.089 ns
Romagnol-5	-	-	filler	.842* (24)	-
				.002	
Tuscan-6	-	-	-	filler	.895* (24)
					.017

Table 4.33. Shapiro-Wilk test of normality results for intelligibility scores: *W*-value, (degrees of freedom) and *p*-value.

Table 4.34 presents alternative way of displaying the results.

Participants	Score on stimuli 'at west'		Score on stimuli 'at east'	
	<i>W</i> (df)	p	W(df)	p
Occitan-1	.882 (11)	.111, ns	.840* (11)	.031
Occitan-2	.938 (24)	.146, <i>ns</i>	Filler	-
Piedmontese-3	.881* (24)	.009	.843* (24)	.002
Emilian-4	.923 (24)	.069, <i>ns</i>	.928 (24)	.089, ns
Romagnol-5	.842* (24)	.002	Filler	-
Tuscan-6	.895* (24)	.017	Filler	-

Table 4.34. Shapiro-Wilk test of normality results for intelligibility scores: *W*-value (degrees of freedom) and *p*-value.

4.3.*A*.5.2. Comparing intelligibility scores across the Romagnol-Tuscan border with intelligibility scores across the Occitan-Piedmontese border

With reference to Prediction 1 (see Sections 4.1.2.1 and 4.2.5.1)⁴⁶, this section compares:

- the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility score obtained
 - a. by Occitan-1 participants on Piedmontese-3 stimuli, and
 - b. by Piedmontese-3 participants on Occitan-2 stimuli.

In comparison *a*, Occitan-1 participants were used instead of the expected Occitan-2 participants. This was because, as explained in Section 4.2.1.1, Occitan-speaking dwellers of the administratively Italian side of the western Alps (Occitan-2) normally speak Piedmontese too, so their intelligibility score on Piedmontese-3 stimuli would not be informative for the current aims.

Therefore, a null hypothesis was formulated for each of the pairs of scores concerned. The null hypotheses (H_0a , b) are that there is no difference between intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli and intelligibility scores obtained:

- a. by Occitan-1 participants on Piedmontese-3 stimuli, and
- b. by Piedmontese-3 participants on Occitan-2 stimuli.

The alternative hypotheses $(H_1 a, b)$ are that there is difference between those intelligibility scores.

A Mann-Whitney U two-independent-samples test⁴⁷ of significance was therefore conducted between each of the two pairs of intelligibility scores concerned. The results are displayed in Table 4.35.

Test for the difference between	U	р
Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli, and		
a. Occitan-1 participants' intelligibility score on Piedmontese-3 stimuli	35.0	< .001
b. Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli	63.5	< .001

Table 4.35. Results of Mann-Whitney U two-independent-samples test of significance: U-value and p-value.

⁴⁶ Prediction 1: today (and already in von Wartburg's times) intelligibility is higher between geolects spoken at the two sides of the Apennines—namely between Tuscan-6 and Romagnol-5—than between Piedmontese-3 and Occitan-2 (see Section 4.2.5.1).

⁴⁷ Namely, a non-parametric test, see Table 4.33.

Both the null hypotheses (H₀ *a*, *b*) were rejected, since Tuscan-6 participants' intelligibility scores on Romagnol-5 stimuli were statistically significantly different from both the other intelligibility scores, such that Tuscan-6 participants scored lower than Occitan-1 participants and lower than Piedmontese-3 participants, as shown in Table 4.36. (data taken from Tables 4.11 and 4.12) and Figure 4.32 below:

	Percent	Confidence
	confidence	interval for mean
	interval for mean	(95%) out of 14
	(95%)	stimuli
a. Occitan-1 participants' intelligibility score on Piedmontese-3 stimuli	46.86 - 63.50 %	6.56 - 8.89
b. Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli	49.36 - 54.86 %	6.91 - 7.68
c. Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli	31.79 - 41.43 %	4.45 - 5.80

Table 4.36 (data taken from Tables 4.11 and 4.12). Estimates of intelligibility scores: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.



Figure 4.32. Boxplots for the intelligibility scores compared and reported in Table 4.36 above.

In Table 4.32, two mean scores require further attention. These are the mean score obtained by Occitan-1 participants (Fr) on Occitan-2 (It) stimuli (51.93%) and the mean score obtained by the same participants on the geographically more distant (and said in the literature to be genealogically less closely related) Piedmontese-3 stimuli (55.21%). Although not crucial to the aim of the present

study, future research would be useful to, in addition, attempt some interpretation of these results, especially if it turns out that there is a statistically significant difference between the two scores. Therefore, differences between Occitan-1 participants scores on Occitan-2 stimuli and Piedmontese-3 stimuli are considered.

The null hypothesis is that there is no difference between the intelligibility score obtained by Occitan-1 participants on Occitan-2 stimuli and on Piedmontese-3 stimuli.

The alternative hypothesis is that there is difference between those intelligibility scores.

A Wilcoxon Signed-Rank two-related-samples test was therefore conducted. No significant difference was found between the two sets of scores (Z = -.656, p = .512, ns).

Figure 4.33 displays the two intelligibility scores.



Figure 4.33. Boxplots for Occitan-1 participants' intelligibility scores on Occitan-2 and Piedmontese-3 stimuli. The small circle corresponds to an outlier value scored by participant n. 11 according to the numbering that identifies each of the 131 participants in the entire chain A.

4.3.A.5.3. COMPARING INTELLIGIBILITY SCORES ACROSS THE ROMAGNOL-TUSCAN BORDER WITH

INTELLIGIBILITY SCORES ACROSS THE ALPINE RIDGE

With reference to Prediction 1-*a* (see Sections 4.1.2.1 and 4.2.5.1)⁴⁸, this section compares:

⁴⁸ Prediction 1-*a*: today intelligibility is higher between the geolects spoken at the two sides of the Apennines—namely between Tuscan-6 and Romagnol-5—than between the geolects spoken at the two sides of the Alps—namely between Occitan-2 and Occitan-1 (see Section 4.2.5.1).

- the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility score obtained
 - a. by Occitan-1 participants on Occitan-2 stimuli, and
 - b. by Occitan-2 participants on Occitan-1 stimuli.

A null hypothesis was formulated for each of the two pairs of scores concerned. The null hypotheses ($H_0 a$, b) are that there is no difference between intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli and intelligibility scores obtained:

- a. by Occitan-1 participants on Occitan-2 stimuli, and
- b. by Occitan-2 participants on Occitan-1 stimuli.

The alternative hypotheses $(H_1 a, b)$ are that there is difference between those intelligibility scores.

A Mann-Whitney U two-independent-samples test⁴⁹ of significance was therefore conducted between each of the pairs of intelligibility scores concerned. The results are displayed in Table 4.37.

Test for the difference between	U	р
Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli, and		
<i>a</i> . Occitan-1 participants' intelligibility score on Occitan-2 stimuli	33.5	< .001
b. Occitan-2 participants' intelligibility score on Occitan-1 stimuli	7.0	< .001

Table 4.37. Results of Mann-Whitney U two-independent-samples test of significance: U-value and p-value.

These results allow both null hypotheses (H₀ *a*, *b*) to be rejected. Indeed, Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli was statistically significantly different from both the other intelligibility scores, such that Tuscan-6 participants scored lower than Occitan-1 participants and lower than Occitan-2 participants, as shown in Table 4.38 (data taken from Tables 4.11 and 4.12) and Figure 4.34:

⁴⁹ Namely, a non-parametric test, see Table 4.33.

	Percent	Confidence
	confidence	interval for mean
	interval for mean	(95%) out of 14
	(95%)	stimuli
a. Occitan-1 participants' intell. score on Occitan-2 stimuli	45.86 - 58.07 %	6.42 - 8.13
b. Occitan-2 participants' intell. score on Occitan-1 stimuli	62.86 - 69.86 %	8.80 - 9.78
c. Tuscan-6 participants' intell. score on Romagnol-5 stimuli	31.79 - 41.43 %	4.45 - 5.80

Table 4.38 (data taken from Tables 4.11 and 4.12). Estimates of intelligibility scores: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.



Figure 4.34. Boxplots for the intelligibility scores compared and reported in Table 4.38 above. The small circle corresponds to the outlier value scored by participant n. 11, according to the numbering that identifies each of the 131 participants in the entire chain A.

4.3.*A*.5.4. Comparing the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Alps

With reference to Prediction 2 (see Sections 4.1.2.1 and 4.2.5.1)⁵⁰, this section makes the comparisons presented in I and II. This will allow us to compare the magnitudes of difference

⁵⁰ Prediction 2: today (and already in von Wartburg's times) intelligibility decreases more abruptly across the Alps (namely along the portion of chain running from Occitan-1, through Occitan-2 to Piedmontese-3) than across the Apennines (namely along the portion of chain running from Emilian-4, through Romagnol-5 to Tuscan-6) (see Section

concerning intelligibility scores collected in *all possible* directions, namely on stimuli 'at west' and on stimuli 'at east' when possible and/or relevant.

I. First, the following will compare:

- a. the magnitude of the *possible* difference between
 - Emilian-4 participants' intelligibility score on Romagnol-5 stimuli, and
 - o Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli,
- b. with the magnitude of the *possible* difference between
 - Occitan-1 participants' intelligibility score on Occitan-2 stimuli, and
 - Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli.

Two null hypotheses (H₀ a, b) were formulated with the respective alternative hypotheses (H₁ a, b).

H₀*a*: Emilian-4 participants' score = Tuscan-6 participants' score;

H₁*a*: Emilian-4 participants' score \neq Tuscan-6 participants' score.

H₀*b*: Occitan-1 participants' score = Piedmontese-3 participants' score;

H₁*b*: Occitan-1 participants' score \neq Piedmontese-3 participants' score.

Concerning the scores in *a*, a Mann-Whitney U two-independent-samples test of significance was conducted. The two sets of scores differed significantly (U = 1.0; p < .001). Therefore, null hypothesis H₀*a* was rejected.

The magnitude of the difference just tested, namely between Emilian-4 participants' and Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli, was calculated, resulting in a value of Cohen's d = 1.72, corresponding to what is approximately described as a "huge"⁵¹ effect (Cohen 1988; Sawilowsky, 2009).

^{4.2.5.1).}

⁵¹ Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

Concerning the scores in *b*, a Mann-Whitney U two-independent-samples test of significance was conducted. No significant difference was found between the two sets of scores (U = 120.0; p = .654, *ns*). Therefore, null hypothesis H₀*b* was not rejected.

The results demonstrated that the magnitude of the difference in *a*, namely between Emilian-4 participants' and Tuscan-6 participants' intelligibility scores on Romagnol-5 stimuli, is larger than the magnitude of the difference in *b*, namely between Occitan-1 participants' and Piedmontese-3 participants' intelligibility scores on Occitan-2 stimuli.⁵² Indeed, no significant difference was found between Occitan-1 participants' score and Piedmontese-3 participants' score. Instead, Tuscan-6 participants' score was significantly lower than Emilian-4 participants' score, and the magnitude of the effect of 'data point' may be characterised as "huge" (Cohen, 1988; Sawilowsky, 2009).

II. Second, the following will compare:

- a. the magnitude of the *possible* difference between
 - Romagnol-5 participants' intelligibility score on Emilian-4 stimuli, and
 - Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli,
- b. with the magnitude of the *possible* difference between
 - Occitan-2 participants' intelligibility score on Occitan-1 stimuli, and
 - Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli.

Hence, two null hypotheses (H₀ a, b) were formulated, with the respective alternative hypotheses (H₁ a, b).

H₀*a*: Romagnol-5 participants' score = Tuscan-6 participants' score;

H₁*a*: Romagnol-5 participants' score \neq Tuscan-6 participants' score.

H₀*b*: Occitan-2 participants' score = Piedmontese-3 participants' score;

⁵² Before presenting these results, a further null hypothesis (and the respective alternative hypothesis) should actually be formulated, stating the non-difference between the magnitude of difference in *a*. and the magnitude of difference in *b* (see Section 4.2.5.2). However, the results of the tests of significance just conducted (there is significant difference in *a*, no significant difference was found in *b*) made the explicit formulation of that null hypothesis unnecessary.

H₁*b*: Occitan-2 participants' score \neq Piedmontese-3 participants' score.

Concerning the scores in *a*, a Mann-Whitney U two-independent-samples test of significance was conducted. There was a statistically (highly) significant difference between the two sets of scores (U = 2.0, p < .001). Therefore, the null hypothesis H₀*a* was rejected.

Concerning the scores in *b*, a Mann-Whitney U two-independent-samples test of significance was conducted. There was a statistically significant difference between the two sets of scores (U = 52.5, p < .001). Therefore, the null hypothesis H₀*b* was rejected.

In both *a* and *b*, the scores differed significantly. A null hypothesis (H₀) was therefore formulated. The null hypothesis (H₀) states that there is no difference between the magnitude of the difference in *a* and the magnitude of the difference in *b*. The alternative hypothesis (H₁) states that there is difference between those magnitudes of difference.

H₀: magnitude in a. = magnitude in b.

H₁: magnitude in a. \neq magnitude in b.

To test this, the magnitude of the difference in *a*, namely between Romagnol-5 participants' intelligibility score on Emilian-4 stimuli and Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli, was calculated, resulting in a value of Cohen's d = 1.73. This corresponds to what may be described as an approximately "huge"⁵³ effect (Cohen 1988; Sawilowsky, 2009).

Following this, the magnitude of the difference in *b*, namely between Occitan-2 participants' intelligibility score on Occitan-1 stimuli and Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli, was calculated. The resulting value of Cohen's d = 1.43 corresponded to what has been described as an approximately "very large"⁵⁴ effect (Cohen 1988; Sawilowsky, 2009).

Results of comparison II confirmed the results of comparison I. They demonstrated that the magnitude of the difference in a, namely between Romagnol-5 participants' intelligibility score on Emilian-4 stimuli and Tuscan-6 participants' intelligibility scores on Romagnol-5 stimuli, was larger than the magnitude of the difference in b, namely between Occitan-2 participants'

⁵³ Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

⁵⁴ Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

intelligibility score on Occitan-1 stimuli and Piedmontese-3 participants' intelligibility scores on Occitan-2 stimuli. Indeed, in *a*, the magnitude of the difference was Cohen's d = 1.73 ("huge"), while in *b*, the magnitude of the difference was Cohen's d = 1.43 ("very large") (Cohen, 1988; Sawilowsky, 2009).

4.3.*A*.5.5. Comparing intelligibility scores across the Apennines with intelligibility scores across the Po Valley and Romagna

With reference to Prediction 3* (see Sections 4.1.2.1 and 4.2.5.1 above)⁵⁵, this section will compare:

- the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli with the intelligibility score obtained
 - a. by Piedmontese-3 participants on Emilian-4 stimuli,
 - b. by Emilian-4 participants on Piedmontese-3 stimuli,
 - c. by Emilian-4 participants on Romagnol-5 stimuli (actually already compared), and
 - d. by Romagnol-5 participants on Emilian-4 stimuli.

A null hypothesis was formulated for each of the four pairs of scores concerned. The null hypotheses (H₀ *a*-*d*) are that there is no difference between the intelligibility score obtained by Tuscan-6 participants on Romagnol-5 stimuli and the intelligibility score obtained:

- a. by Piedmontese-3 participants on Emilian-4 stimuli,
- b. by Emilian-4 participants on Piedmontese-3 stimuli,
- c. by Emilian-4 participants on Romagnol-5 stimuli,
- d. by Romagnol-5 participants on Emilian-4 stimuli.

The alternative hypotheses ($H_1 a$ -d) are that there is difference between those pairs of intelligibility scores.

A Mann-Whitney U two-independent-samples test of significance was therefore conducted between each of the pairs of scores concerned. The results are displayed in Table 4.39.

⁵⁵ Prediction 3*: today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility is lower and decreases more abruptly than across the Apennines (namely along the portion of chain running from Emilian-4, through Romagnol-5 to Tuscan-6) (see Section 4.2.5.1).

Test the difference between	U	р
Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli, and		
a. Piedmontese-3 participants' intelligibility score on Emilian-4 stimuli	3.0	< .001
b. Emilian-4 participants' intelligibility score on Piedmontese-3 stimuli	.0	< .001
c. Emilian-4 participants' intelligibility score on Romagnol-5 stimuli	1.0	< .001
d. Romagnol-5 participants' intelligibility score on Emilian-4 stimuli	2.0	< .001

Table 4.39. Results of Mann-Whitney U two-independent-samples test of significance: U-value and p-value.

Null hypotheses H_0 *a-d* should be rejected, since Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli was statistically significantly different from all the other intelligibility scores investigated, such that Tuscan-6 participants scored lower than Emilian-4 participants on both Romagnol-5 and Piedmontese-3 stimuli, lower than Piedmontese-3 participants, and lower than Romagnol-5 participants, as shown in Table 4.40 (data taken from Tables 4.11 and 4.12) and Figure 4.35 below:

	Percent confidence	Confidence
	interval for mean	interval for mean
		out of 14 stimuli
<i>a</i> . Piedmon3 participants' intell. score on Emilian-4 stimuli	79.71 - 91.14 %	11.16 - 12.76
b. Emilian-4 participants' intell. score on Piedmon3 stimuli	74.64 - 81.29 %	10.45 - 11.38
c. Emilian-4 participants' intell. score on Romagn5 stimuli	79.43 - 88.43 %	11.12 - 12.38
d. Romagnol-5 participants' intell. score on Emilian-4 stimuli	78.93 - 87.79 %	11.05 - 12.29
e. Tuscan-6 participants' intell. score on Romagnol-5 stimuli	31.79 - 41.43 %	4.45 - 5.80

Table 4.40 (data taken from Tables 4.11 and 4.12). Estimates of population intelligibility score: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.



Figure 4.35. Boxplots for the intelligibility scores compared and reported in Table 4.40 above. The small circles indicate outlier values scored by participants n. 37 and 41 (*a*), 87 and 99 (*d*), according to the numbering that identifies each of the 131 participants in the entire chain *A*.

4.3.*A*.5.6. Comparing the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Po valley and Romagna

With reference to Prediction 3* (see Sections 4.1.2.1 and 4.2.5.1)⁵⁶, this section will compare:

- *a.* the magnitude (calculated in Section 4.3.*A*.5.4) of the difference between intelligibility scores obtained:
 - o by Emilian-4 participants on Romagnol-5 stimuli, and
 - o by Tuscan-6 participants on Romagnol-5 stimuli,
- b. with the magnitude of the *possible* difference between the intelligibility scores obtained
 - o by Piedmontese-3 participants on Emilian-4 stimuli, and
 - o by Romagnol-5 participants on Emilian-4 stimuli,
- c. and with the magnitude of the *possible* difference between the intelligibility scores obtained

⁵⁶ Prediction 3*: today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility is lower and decreases more abruptly than across the Apennines (namely along the portion of chain running from Emilian-4, through Romagnol-5 to Tuscan-6) (see Section 4.2.5.1).

- o by Occitan-1 participants on Piedmontese-3 stimuli, and
- by Emilian-4 participants on Piedmontese-3 stimuli.

Note that in point *c*, as was done in Section 4.3.*A*.5.2, the unusable intelligibility scores obtained by the trilingual *Occitan-2* participants on Piedmontese-3 stimuli will be replaced by the intelligibility scores obtained by the *Occitan-1* participants on Piedmontese-3 stimuli.

COMPARING MAGNITUDES OF DIFFERENCE IN a AND b. Concerning the comparison between the magnitudes of difference in *a* and *b*, a null hypothesis was formulated. The null hypothesis (H_0) is that there is no difference between:

- Piedmontese-3 participants' intelligibility score on Emilian-4 stimuli, and
- Romagnol-5 participants' intelligibility scores on Emilian-4 stimuli.

The alternative hypothesis (H₁) is that there is such difference:

H₀: Piedmontese-3 participants' score = Romagnol-5 participants' score,

H₁: Piedmontese-3 participants' score \neq Romagnol-5 participants' score.

A Mann-Whitney U two-independent-samples test was therefore performed. No significant difference was found between the two groups (U = 233.50, p = .244, ns). The null hypothesis (H₀) could not be rejected.

The results demonstrated that the magnitude of the difference in *a*, namely between Emilian-4 participants' and Tuscan-6 participants' intelligibility score on Romagnol-5 stimuli (shown in Section 4.3.*A*.5.4), is larger than the magnitude of the difference in *b*, namely between Piedmontese-3 participants' and Romagnol-5 participants' intelligibility score on Emilian-4 stimuli. Indeed, no significant difference was found between the Piedmontese-3 participants' score and the Romagnol-5 participants' score. Instead, Tuscan-6 participants' score was significantly lower than the Emilian-4 participants' score, and the effect of 'data point' was "huge" (see Section 4.3.*A*.5.4 and footnote 51).

COMPARING MAGNITUDES OF DIFFERENCE IN a AND c. Concerning the comparison between the magnitudes of difference in *a* and *c*, a null hypothesis was formulated. The null hypothesis (H_0) is that there is no difference between:

- Occitan-1 participants' intelligibility score on Piedmontese-3 stimuli, and
- Emilian-4 participants' intelligibility scores on Piedmontese-3 stimuli.

The alternative hypothesis (H_1) is that there is such difference.

In order to see whether there was homogeneity of variance between Occitan-1 participants' and Emilian-4 participants' intelligibility score on Piedmontese-3 stimuli, a Levine's test of equality of variance was conducted. No significant difference was found between the variances of the two sets of scores (F(1, 33) = 3.681, p = .064, ns).

These findings, along with the fact that the distribution of the two sets of scores was normal (see Table 4.33), indicated that a parametric test of significance should be run on the data.

A t-test was therefore conducted. The two groups differed significantly (t(33) = -6.606, p < .001). The intelligibility mean score of Occitan-1 participants (M = 7.73, 95% C.I. [6.56, 8.89], SD = 1.737) was statistically significantly lower than the intelligibility mean score of Emilian-4 participants (M = 10.92, 95% C.I. [10.45, 11.38], SD = 1.100; see Table 4.11). The null hypothesis (H₀) was therefore rejected.

Hence, a further null hypothesis (H₀) was formulated, before ultimately comparing the magnitudes of difference in *a* and *c*. The null hypothesis (H₀) is that there is no difference between the magnitude of the difference in *a* (as calculated in Section 4.3.*A*.5.4) and the magnitude of the difference in *c*. The alternative hypothesis (H₁) is that there is difference between those magnitudes of difference.

H₀: magnitude in a = magnitude in c.

H₁: magnitude in $a \neq$ magnitude in c.

Therefore, the magnitude of the difference in c just tested, namely between Occitan-1 participants' and Emilian-4 participants' intelligibility scores on Piedmontese-3 stimuli, was calculated, resulting in a Cohen's d value of 1.17, which corresponds to a "very large" effect size (see footnote 51).

These findings demonstrated that the magnitude of difference in *a*, namely between Emilian-4 participants' and Tuscan-6 participants' intelligibility scores on Romagnol-5 stimuli, is larger than the magnitude of the difference in *c*, namely between Occitan-1 participants' and Emilian-4 participants' intelligibility scores on Piedmontese-3 stimuli. In fact, between the score of the Occitan-1 group (in the French Alps) and the score of the Emilian-4 group, the magnitude of difference was d = 1.17 ("very large"), while between the score of Emilian-4 group and the score of the Tuscan-6 group, the magnitude of difference was d = 1.72 ("huge") (see Section 4.3.*A*.5.4 and footnote 51).

4.3.A.6. INTERIM DISCUSSION OF CHAIN A RESULTS

As presented in Section 4.1.1, previous research shows that differences in intelligibility scores are directly linked to differences in (objective) linguistic similarity (Gooskens, 2006, 2007a; Tang & van Heuven, 2009). In particular, the correlation found between the results of the SPIN test at the sentence level on the one hand-which was used in the present study-and "lexical similarity" and "phonological correspondence" on the other (Tang & van Heuven 2009: 724) allows the interpretation of the current findings in terms of linguistic similarity at least in these two domains of the language. This section therefore presents the linguistic relevance of the results of each prediction testing and considers whether they support or are incompatible with the post-Wartburg hypothesis. Recall that according to the post-Wartburg hypothesis-in a nutshell-the ancient Gallo-Romance varieties of the Cisalpine became more similar to the bordering second-cousin Italo-Romance geolects than to the bordering Gallo-Romance sibling geolects, as a consequence of their contact, as heteronomous geolects, with Italian/Tuscan literary language (see Section 3.2.7; see also Section 3.2.6 for an additional hypothesised cause). Note that in the present and next discussion and conclusion sections, given that intelligibility was measured in the current study by means of the SPIN test, when referring to the 'linguistic relevance of the results' (intended as evidence for) 'linguistic similarity' between the geolects studied, the meaning of the term 'linguistic' is intended to be understood as referring to "lexical similarity" and "phonological correspondence", since these are the domains of the language for which the correlation between the SPIN test results and the objective linguistic distance was studied in previous literature (Tang & van Heuven 2009: 724). The same applies for the expressions '*linguistic* distance' and 'Abstand' (see Section 6.2.1.6, in Future directions).

In the current section, presenting the linguistic relevance of the intelligibility test results will merely consist in presenting the differences between the intelligibility scores obtained by the (chain A) *participants* on *stimuli* in terms of differences in linguistic similarity between participants' *geolect* and target *geolect(s)*. After a discussion of the results of chain B in an analogous section (4.3.B.6), Section 4.4 discusses the results of both the chains, proposing their interpretation at some higher levels of generalization, based on previous dialectological literature and some aspects of the design of the study. Some discussion of this has been anticipated in this preliminary discussion section (and in the analogous Section 4.3.B.6), separating it from the more general discussion presented in

Section 4.4, to assist the reader in distinguishing (1) what can be inferred from the results of each chain study considered separately, (2) what can be inferred from the results of the studies considered together, and (3) what can be inferred by considering the studies in light of information provided by previous dialectological and other kinds of literature.

Prediction 1, recapped concisely, may be expressed as follows:

1. Today intelligibility is higher between Tuscan and Romagnol than between Piedmontese and Occitan of Italy.

The results presented in this study show that Prediction 1 is not borne out (see Section 4.3.A.5.2), providing evidence, on the contrary, that today intelligibility is lower between Tuscan and Romagnol speakers than between Piedmontese speakers and Occitan speakers of Italy. This in turn indicates that there is no evidence that Romagnol is currently more similar to Tuscan than Piedmontese is to Occitan of Italy, as the post-Wartburg hypothesis implies. On the contrary, although based on partial data⁵⁷, these results provide evidence that Piedmontese is more similar to Occitan of Italy than Romagnol is to Tuscan. This is incompatible with the post-Wartburg hypothesis and is direct evidence against it. The fact that intelligibility between Occitan-2 and Piedmontese-3 geolects was measured only in one direction, due to the trilingualism of Occitan speakers of Italy (Occitan-2), does not impede this analysis of the data, firstly because, as we have seen in Section 4.1.5 (and just recalled in footnote 57), there is no evidence that the reverse measure would be significantly different in conditions of equal mutual (non-)exposure. Secondly, the unusable intelligibility data of Occitan-2 trilingual participants (of Italy) on Piedmontese-3 stimuli were replaced by intelligibility data of the geographically more distant Occitan-1 participants (of France) on Piedmontese-3 stimuli (see Section 4.2.1.1). Therefore, the results provide evidence that Piedmontese is more similar not only to Occitan of Italy but even to Occitan of France than Romagnol is to Tuscan. This means that the replacement of the unusable intelligibility data of Occitan-2 with data of Occitan-1 in fact increases (rather than diminishes) the linguistic informativeness of the results.

⁵⁷ Recall, it is no longer possible to get *monolingual* Romagnol-5 participants' score on Tuscan-6 stimuli. However, in Section 4.1.5 we have seen that there is no evidence that such measure would be significantly different from the actually collected reverse one, in conditions of even mutual (non-)exposure. Therefore, these data should be regarded as 'partial' only in the sense that they are quantitatively fewer than the ones collected between other pairs of data points (i.e. in both directions), and not as insufficiently informative.

Here is Prediction 1-*a* recapped concisely:

1-*a*. Today intelligibility is higher between Tuscan and Romagnol than between Occitan of Italy and Occitan of France.

The results show that Prediction 1-*a* is not borne out (see Section 4.3.*A*.5.3), providing evidence, on the contrary, that today intelligibility is *lower* between Tuscan and Romagnol speakers than between Occitan speakers of Italy and Occitan speakers of France. This in turn indicates that there is no evidence that Romagnol is now more similar to Tuscan than Occitan of France is to Occitan of Italy, as the post-Wartburg hypothesis implies⁵⁸. On the contrary, although based on partial data⁵⁹, the results provide evidence that Occitan of France is more similar to Occitan of Italy than Romagnol is to Tuscan. This is incompatible with the post-Wartburg hypothesis and is direct evidence against it. The fact that I used sentences spoken in Pradzalà geolect as Occitan-2 stimuli notwithstanding I collected Occitan-2 intelligibility data from Chaumount participants does not impede this analysis of the data. Indeed, as presented in Section 4.2.1.4, scholars ascribe the Chaumount and Pradzalà geolects to the same Northern Cisalpine sub-group of Occitan, suggesting that they can be considered linguistically equivalent to a large extent for the aims of the present study.

Here is Prediction 2 concisely recapped:

2. Today intelligibility decreases more abruptly across the Alps than across the Apennines.

The results show that Prediction 2 is not borne out (see Section 4.3.*A*.5.4), providing evidence, on the contrary, that today intelligibility decreases *less* abruptly across the Alps than across the Apennines. Indeed, the magnitude of the difference 'across the Apennines'⁶⁰ is larger than the magnitude of the difference 'across the Alps'⁶¹ (see Section 4.3.*A*.5.4). This in turn indicates that there is no evidence that today linguistic similarity decreases more abruptly 'across the Alps' than 'across the Apennines', as the post-Wartburg hypothesis implies. On the contrary, the present results provide evidence that today linguistic similarity decreases more abruptly 'across the

⁵⁸ Actually, a more precise formulation of this phrase—but probably less readily readable in this section—would be "as the counter-conjecture a (see Section 4.1.2.1) instead implies".

⁵⁹ See footnote 57.

⁶⁰ At this level of generalization, this expression means 'across *the three geolects actually investigated* that are spoken at the two sides of the Apennines'.

⁶¹ At this level of generalization, this expression means 'across *the three geolects actually investigated* that are spoken at the two sides of the Alps'.

Apennines' than 'across the Alps'.

Finally, Prediction 3* was stated as follows:

3*. Today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility *(i)* is lower than and *(ii)* decreases more abruptly than across the Apennines.

The results show that Prediction $3^{*}(i)$ is borne out (see Section 4.3.*A*.5.5). They also show that also Prediction $3^{*}(ii)$ is borne out (see Section 4.3.*A*.5.6), since the magnitude of difference 'across the Apennines' (see 4.3.*A*.5.4) is larger than the magnitude of difference measured along both the other two chain segments investigated, namely the segment including Piedmontese-3 – Emilian-4 – Romagnol-5 (where no significant difference was found) and the segment including Occitan-1 – Piedmontese-3 – Emilian-4. These results provide evidence that today intelligibility decreases more abruptly 'across the Apennines'⁶² than across any segment of the chain included between the French Alps and the Romagnol Apennines. This in turn indicates that there is evidence that the whole of Po valley and Romagna remain linguistically united, forming, with Alpine Occitania of France, a continuum which is smoother than the continuum they form with Tuscan.

The fact that Romagnol-5 participants were recruited in Sêrsna instead of Marchèt, which is the locality where Romagnol-5 stimuli were translated and recorded, does not impede this analysis of the data. On the contrary, it strengthens the informativeness of the results. Indeed, Sêrsna is even further from the Emilian-4 stimuli locality (Varan) than Marchèt is, and in particular it is located in an upper part of the Apennines (in the same valley), where the literature unanimously indicates that more conservative Gallo-"Italic" geolects are spoken than the ones spoken in the lower Apennines (where both Varan and Marchèt are situated) (see Loporcaro 2009). If this general trend indicated in the literature was confirmed for the localities at issue, it would be unlikely that Marchèt participants would score lower on Emilian-4 (Varan) stimuli than Sêrsna participants did. On the contrary, it would suggest that they are likely to score even higher⁶³. In order to ascertain whether the scholarly descriptions also apply to Sêrsna, Marchèt and Varan geolects, I conducted an exploratory investigation asking some native speakers of Sêrsna geolect to pronounce the sentences

⁶² See footnote 60.

⁶³ One should note that this statement is overabundant in order to falsify the post-Wartburg hypothesis.

that are used in the actual stimuli. Table 4.41 below shows that some innovative traits are shared by Varan and Marchèt geolects but not by Sêrsna geolect:

Marchèt (Romagnol-5 stimulus locality) and	Sêrsna (Romagnol-5 participant locality)
Varan (Emilian-4)	
More advanced level of palatalization of	
-CL-: [kuˈ tʃ ar] "spoon"	[kuˈ c ar]
Assibilation of [tfe-, tfi-] < Proto-	
Romance [ke-, ki-]:	
['sera, 'sera] "wax"	['t ʃ era]
Intervocalic voicing:	
[bevi'dur] "drinker"	[bevi tur]
-(A)TUM:	
[fja, ta'ja, mu'tʃɛ, rjem'pi]	[fjat, ta'jat, mu'tʃɛt, ram'pit]

Table 4.41. Some examples of the innovative traits shared by Marchèt and Varan geolects (left column) compared with the correspondent more conservative forms of Sêrsna geolect (right column).

Therefore, it appears unlikely that had Marchèt participants been used, they would have scored lower on Emilian-4 (Varan) stimuli than Sêrsna participants did. On the contrary, it appears likely that they would have scored even higher⁶⁴.

In summary, the results obtained from chain *A* are incompatible with the post-Wartburg hypothesis. In fact, they provide direct evidence against it.

4.3.*B*. CHAIN *B*

Section 4.3.*B*.1 presents the descriptive statistics and the estimates for intelligibility scores; Section 4.3.*B*.2 controls for gender of voice (namely the gender of the speakers who produced the stimuli); and Section 4.3.*B*.3 controls for participant gender. Section 4.3.*B*.4 presents and checks the potential effect of the other control variables, namely foreign language and Latin language competence, contact with target areas, exposure to target languages, and attitudes towards target areas and target languages. In Section 4.3.*B*.5 the inferential statistics used to compare the

⁶⁴ Recall, this statement is overabundant in order to falsify the post-Wartburg hypothesis.

intelligibility scores (i.e., used to test the post-Wartburg hypothesis) within chain *B* are presented. Finally, Section 4.3.*B*.6. presents a preliminary discussion (limited to chain *B* results).

Data corresponding to the filler items / geolects were removed from the statistical analyses. Therefore, the descriptive statistics and results relating only to the three experimental data points tested (Occitan-7, Piedmontese-9, and Lombard-10; see Section 4.2.1 above) are reported in the text, in tables and figures for stimuli 'at east'.

Figure 4.36 recalls the position of chain *B* data points.



Figure 4.36. Chain B data points. The languages of the Gallo-"Italic" group are spoken inside the thick line.

4.3.B.1. INTELLIGIBILITY SCORES – DESCRIPTIVE STATISTICS AND ESTIMATES

Table 4.42 provides the mean percentage intelligibility score for each data point and the corresponding estimates of population means (95% confidence interval for mean).

	Stimuli				
	Occitan-7	Occitan-8	Piedmontese-9	Lombard-10	Emilian-11
Participant	-	85.71	49.71	-	-
Occitan-7		80.86-90.57	44.36-55.00		
		1.567	1.718		
Occitan-8	73.21	-	-	-	-
	68.57-77.86				
	1.539				
Piedmontese-9	-	88.99	-	85.12	-
		85.55-92.43		80.86-89.38	
		1.141		1.412	
Lombard-10	-	-	70.24	-	82.44
			66.72-73.76		78.67-86.21
			1.167		1.250
Emilian-11	-	-	-	83.93	-
				80.57-87.29	
				1.113	
Tuscan-12	-	-	-	-	37.50
					33.60-41.40
					1.294

Table 4.42. Mean percentage intelligibility scores, percent confidence interval (95%) and SD.

Table 4.43 provides the means of raw intelligibility scores for each data point, out of 14 correct responses possible (the test included 14 stimuli for each of the two target geolects; see Section 4.2.2.2.5). It also shows the respective estimates of population means (95% confidence interval for mean) and the min-max values.

	Stimuli Occitan-7	Occitan-8	Piedmontese-9	Lombard-10	Emilian-11
Participant Occitan-7	-	12.00 11.32-12.68 9-14	6.96 6.21-7.70 4-10	-	-
Occitan-8	10.25 9.60-10.90 6-13	-	-	-	-
Piedmontese-9	-	12.46 11.98-12.94 11-14	-	11.92 11.32-12.51 9-14	-
Lombard-10	-	-	9.83 9.34-10.33 8-12	-	11.54 11.01-12.07 9-14
Emilian-11	-	-	-	11.75 11.28-12-22 10-14	-
Tuscan-12	-	-	-	-	5.25 4.70-5.80 3-8

Table 4.43. Intelligibility mean scores (out of 14 stimuli), confidence interval for mean (95%) and min-max.


Figures 4.37 and 4.38 present an alternative way of displaying the results above.

Figure 4.37. Intelligibility scores on stimuli 'at west' (out of 14 stimuli).



Figure 4.38. Intelligibility scores on stimuli 'at east' (out of 14 stimuli).

4.3.B.2. CONTROLLING FOR GENDER OF VOICE

In order to control for gender of voice (i.e., the gender of the speakers who produced the stimuli), an equal number of stimulus sentences were produced for each geolect investigated by a male and a female speaker and were included in each of the four acoustic lists obtained by the Latin square design (see Section 4.2.2.2.5). A check was then performed to determine whether gender of voice influenced intelligibility scores. This was done because the result of this check would indicate whether the stimuli could be treated as belonging to a single set.

The null hypothesis (H_0) is that there is no difference between:

- intelligibility score obtained on male voices (namely on stimuli produced by the male speakers), and
- intelligibility score obtained on female voices (namely on stimuli produced by the female speakers).

The alternative hypothesis (H₁) is that there is difference between those intelligibility scores.

H₀: score on male voices = score on female voices,

H₁: score on male voices \neq score on female voices.

A Shapiro-Wilk test of normality was conducted for the set of intelligibility scores obtained on the male voices and for the set of intelligibility scores obtained on the female voices. The distribution which was obtained was statistically significantly different from the normal distribution for both the male voices (W(143) = .925, p < .001) and the female voices (W(143) = .930, p < .001).

These findings indicated that a non-parametric test of significance should be conducted on the data.

A Wilcoxon Signed-Ranks two-related-samples test was therefore conducted. No significant difference was found between the two sets of scores (those obtained on the male voice and on the female voice respectively) (Z = -.847, p = .397, ns).

Figure 4.39 displays the intelligibility scores on the male and female voices.



Figure 4.39. Intelligibility scores on male voice and on female voice, out of 14 stimuli for each gender of voice. The small circles indicate outlier values scored by participants 123, 125, 127, 129, 130, 131 and 139, according to the numbering that identifies each of the 143 participants in the entire chain *B*.

No evidence was found that gender of voice influenced intelligibility score. That is, the null hypothesis (H_0) could not be rejected. Therefore, the scores obtained on male voice and the scores obtained on female voice were collapsed into a single set of scores.

4.3.*B*.3. CONTROLLING FOR PARTICIPANT GENDER

To control for participant gender, I checked whether it influenced intelligibility scores (see Section 4.1.4 and 4.2.3.1). This was done because the results would indicate whether to treat male and female participants of each data point as a single group or as two distinct groups.

The null hypothesis (H_0) is that there is no difference in performance between male participants and female participants. The alternative hypothesis (H_1) is that there is such a difference. The hypotheses were expressed as follows:

H₀: male participants' intelligibility score = female participants' intelligibility score,

H₁: male participants' intelligibility score \neq female participants' intelligibility score.

A Shapiro-Wilk normality test was conducted for male participants' intelligibility scores and for female participants' intelligibility scores. The distribution obtained was statistically significantly

different from a normal distribution for both the male participants (W(72) = .908, p < .001) and the female participants (W(71) = .917, p < .001).

These findings indicated that a non-parametric test of significance should be conducted on the data.

A Mann-Whitney U two-independent-samples test was therefore conducted. No significant difference was found between the two sets of scores (those obtained by male and female participants) (U = 2409.5, p = .551, ns).

Figure 4.40 displays the intelligibility scores of male and female participants.



Figure 4.40. Intelligibility scores (on stimuli 'at west' and stimuli 'at east' combined) of male and female participants, out of 28 total stimuli. The little circles indicate outlier values scored by participants 125, 127 and 130, according to the numbering that identifies each of the 143 participants in the entire chain *B*.

Based on these results, no evidence was found that participant gender affected intelligibility score. The null hypothesis could not be rejected. Therefore, scores of male participants and scores of female participants were collapsed into a single set of scores in the following tests and calculations.

4.3.B.4. CONTROL VARIABLES

To control for the variables presented in Section 4.2.2.1 (corresponding to questions 1, 2, 5, 6, 7, 8 and 9 of the questionnaire), a multiple regression analysis was run. The purpose of this analysis was to check whether these variables had an effect on the intelligibility score. One regression was run with scores on stimuli 'at west' and another with scores on stimuli 'at east', both because

questions 5, 6, 7, 8 and 9 asked for two separate responses concerning area/language 'at west' and area/language 'at east', and because for three data points out of six, stimuli 'at east' were fillers and were excluded from the statistical analysis. The multiple regressions were run while controlling for 'data point'⁶⁵. Scores for *foreign language competence* are presented in Section 4.3.*B*.4.1; scores for *Latin language competence* in Section 4.3.*B*.4.2; scores for *contact with target areas* in Section 4.3.*B*.4.3; scores for *exposure to target languages* in Section 4.3.*B*.4.4; and scores for *attitudes towards target areas and languages* in Section 4.3.*B*.4.5. Finally, the results of the multiple regression analyses are presented in Section 4.3.*B*.4.6.

4.3.B.4.1. FOREIGN LANGUAGE COMPETENCE – QUESTION 1

The results show that 53.15% of participants did not know any foreign language; 38.46% knew only one foreign language (47 participants knew French, 17 English, 3 Spanish); and 8.39% knew a second foreign language (9 participants knew English, 3 Spanish, besides another foreign language). No participants identified as knowing a third foreign language.

French was known by 47 participants; English was known by 26 participants; and Spanish was known by 6 participants. Seventy-six participants did not know any foreign language.

Figures 4.41 and 4.42 show the percentage of participants who knew a foreign language (and which language) for each of the five levels of competence (none, school, elementary, intermediate, advanced). The figures refer to foreign language 1 and foreign language 2 respectively.

⁶⁵ See Section 4.2.5.2 for a presentation of the independent variable 'data point'. Recall: each data point corresponds to a different participants' native geolect, and to two different target geolects, respectively 'at west' and 'at east'. Therefore, running the multiple regressions without controlling for 'data point' would have made 'data point' act as confounding variable.



Figure 4.41. Foreign language 1 competence. Percentage distribution of foreign languages known by competence level: none, school, elementary, intermediate, advanced.



Figure 4.42. Foreign language 2 competence. Percentage distribution of foreign languages known by competence level: none, school, elementary, intermediate, advanced.

Table 4.44. gives an overall picture of how many and which foreign languages participants reported knowing.

	Foreign language 1	Foreign language 2
None	76 (53.15%)	131 (91.61)
French	47 (32.87)	-
English	17 (11.89)	9 (6.29)
Spanish	3 (2.1)	3 (2.1)
	143 (100.00)	143 (100.00)

Table 4.44.	Distribution and	(percent o	distribution)	of foreign	languages	known,	for ea	ach of the	three	foreign
languages.										

Table 4.45 below gives an overall picture of the distribution of the levels of foreign language competence.

	Foreign language 1	Foreign language 2
None	76 (53.15%)	131 (91.61)
School level	47 (32.87)	11 (7.69)
Elementary	9 (6.29)	1 (.7)
Intermediate	9 (6.29)	-
Advanced	2 (1.4)	-
	143 (100.00)	143 (100.00)

Table 4.45. Distribution and (percent distribution) of foreign language competence levels (none, school, elementary, intermediate, advanced), for each of the three foreign languages.

On a five-point rating scale (0-4), for foreign language 1 the mean competence was M = .70 (SD = .942); for foreign language 2 M = .09 (SD = .312).

4.3.*B*.4.2. LATIN LANGUAGE COMPETENCE – QUESTION 2

Figure 4.43 shows what percentage of participants indicated knowing Latin for each of the four levels of competence (none, basic, good, very good).



Figure 4.43. Latin language competence. Percentage distribution of Latin language competence levels: none, basic, good, very good.

The distribution of Latin language competence scores is also displayed in Table 4.46.

None	124 (86,71%)
Basic	14 (9,79)
Good	5 (3,5)
Very good	-
	143 (100.00)

 Table 4.46. Distribution and percent distribution of Latin language competence.

On a four-point rating scale (0-3), the mean Latin language competence was M = .17 (SD = .459).

4.3.*B*.4.3. CONTACT WITH TARGET AREAS – QUESTION 5

Figures 4.44 and 4.45 summarize participants' responses to question 5, which concerned contact with target areas: on a scale from 1 (never/rarely) to 4 (very often), "how often have you been to [the target area 'at west']? And to [the target area 'at east']?"



Figure 4.44. Question 5: *contact* with target area 'at west'. On a scale from 1 to 4, "how often have you been to [the target area 'at west']?" The little circle indicates the outlier value scored by participants 51 and 61, according to the numbering that identifies each of the 143 participants in the entire chain *B*.



Figure 4.45. Question 5: *contact* with target area 'at east'. On a scale from 1 to 4, "how often have you been to [the target area 'at east']?"

Tables 4.47 and 4.48 are two alternative ways of displaying the data presented above.

	Participants								
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11	Tuscan-12			
Target	1.30	2.33	2.13	1.38	1.38	2.04			
area 'at	.470	.761	.612	.495	.576	.806			
west	1-2	1-4	1-3	1-2	1-3	1-3			
Target	1.48	filler	1.46	1.50	filler	filler			
area 'at	.665		.509	.590					
east	1-3		1-2	1-3					

Table 4.47. Question 5: *contact* with target areas, on a scale from 1 (no/scarce contact) to 4 (much contact). Mean score, *SD*, min-max. The data points are displayed in order from 'west' to 'east'.

	<i>Target area</i> Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participants Occitan-7	-	1.48 .665 1-3	1.30 .470 1-2	-	-
Occitan-8	2.33 .761 1-4	-	filler	-	-
Piedmon9	-	2.13 .612 1-3	-	1.46 .509 1-2	-
Lombard-10	-	-	1.38 .495 1-2	-	1.50 .590 1-3
Emilian-11	-	-	filler	1.38 .576 1-3	-
Tuscan-12	-	-	-	filler	2.04 .806 1-3



Most score means were in the low range: 6 means out of 9 fell between 1.30 and 1.50 ('never/rarely'). For Occitan-8 participants, the contact mean with the area 'at west' (Occitan of France) was 2.33, slightly more than sometimes. This is reasonable due to tourism to the nearby administratively French Alps, as reported by the participants themselves. For Piedmontese-9 participants, the mean score for contact with the Occitan area of Italy (Occitan-8) is 2.13 ('slightly more than sometimes'), presumably due to the intra-regional mountain tourism of lowlands Piedmontese people, as reported by the participants themselves. It should be recalled that the localities in the chain are rather close to one another (see Figure 4.2 in Section 4.2.1). Especially

across the Alps and the Apennines, the adjacent localities in the chain are situated at only about 55 km from one another by road, or 40 km as the crow flies. Therefore, the required test condition of 'low contact' between the participants and their target areas—where the two adjacent localities in the chain are situated—could be satisfied only partially. This characteristic and the fact that the distance between the adjacent data points was not constant in the chain risked making a comparison of the scores of the various groups of participants unviable, so that it was necessary to check whether contact with the target area had an effect on intelligibility (see the results of the multiple regression analyses, Section 4.3.*B*.4.6.5).

4.3.B.4.4. EXPOSURE TO TARGET LANGUAGES – QUESTION 6

Figures 4.46 and 4.47 below summarize participants' responses to question 6, which concerned exposure to target languages: on a scale from 1 (never/rarely) to 4 (very often), "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at west']? And a dialect of [the target language at east]?"



Figure 4.46. Question 6: *exposure* to target language 'at west'. On a scale from 1 to 4, "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at west']?" The asterisks indicate extreme outlier values scored by participants 6, 7, 11, 76, 80, 82 and 90, according to the numbering that identifies each of the 143 participants in the entire chain *B*.



Figure 4.47. Question 6: *exposure* to target language 'at east'. On a scale from 1 to 4, "how often do you deal / have you dealt with people who speak / spoke a dialect of [the target language 'at east']?" The asterisks indicate extreme outlier values scored by participants 7, 8, 11, 21, 54, 75, 80, 82 and 88, according to the numbering that identifies each of the 143 participants in the entire chain *B*.

	Participants							
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11	Tuscan-12		
Target language 'at west'	1.17 .491 1-3	2.25 .737 1-4	1.33 .482 1-2	1.17 .381 1-2	1.33 .565 1-3	1.79 .779 1-3		
Target language 'at east'	1.22 .422 1-2	filler	1.04 .204 1-2	1.17 .381 1-2	filler	filler		

Tables 4.49 and 4.50 present two alternative ways of displaying the data above.

Table 4.49. Question 6: *exposure* to target languages, on a scale from 1 (no/scarce familiarity) to 4 (much familiarity). Mean score, *SD*, min-max. The data points are displayed in order from 'west' to 'east'.

	Target language				
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participants	-	1.22	1.17	-	-
Occitan-7		.422	.491		
		1-2	1-3		
Occitan-8	2.25	-	filler	-	-
	.737				
	1-4				
Piedmon9	-	1.33	-	1.04	-
		.482		.204	
		1-2		1-2	
Lombard-10	-	-	1.17	-	1.17
			.381		.381
			1-2		1-2
Emilian-11	-	-	filler	1.33	-
				.565	
				1-3	
Tuscan-12	-	-	-	filler	1.79
					.779
					1-3

Table 4.50. Question 6: *exposure* to target languages, on a scale from 1 (no/scarce familiarity) to 4 (much familiarity). Mean score, *SD*, min-max.

Eight score means out of 9 were in the low range, namely falling between 1.04 ('never/rarely') and 1.79 (less than 'sometimes'). Only for Occitan-8 participants, exposure mean to the Occitan language of France was slightly higher than sometimes (2.25).

4.3.B.4.5. ATTITUDES – QUESTIONS 7, 8 AND 9

QUESTION 7. Figures 4.48 and 4.49 summarize participants' responses to question 7, which concerned attitude towards target areas: on a scale from 1 (not at all) to 5 (very much), "how would you like to live in [the target area 'at west']? And in [the target area 'at east']?"



Figure 4.48. Question 7: *attitude* towards target area 'at west'. On a scale from 1 to 5, "how would you like to live in [the target area 'at west']?" The little circles indicate outlier values scored by participants 42, 60 and 67, according to the numbering that identifies each of the 143 participants in the entire chain *B*.



Figure 4.49. Question 7: *attitude* towards target area 'at east'. On a scale from 1 to 5, "how would you like to live in [the target area 'at east']?"

Tables 4.51 and 4.52 present two alternative ways of displaying the data above.

	Participants								
	Occitan-7	Occitan-8	Piedmon9	Lomb10	Emilian-11	Tuscan-12			
Target area 'at west'	2.22 1.043 1-4	2.83 .963 1-4	3.38 1.013 1-5	2.25 1.073 1-4	1.96 1.042 1-4	2.71 1.334 1-5			
Target area 'at east'	2.91 .949 1-4	filler	2.67 1.090 1-4	3.04 1.197 1-5	filler	filler			

Table 4.51. Question 7: *attitude* towards the target areas, on a scale from 1 (most negative attitude) to 5 (most positive attitude). Mean score, *SD*, min-max. The data points are displayed in order from 'west' to 'east'.

	Target area Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participants Occitan-7	-	2.91 .949 1-4	2.22 1.043 1-4	-	-
Occitan-8	2.83 .963 1-4	-	filler	-	-
Piedmon9	-	3.38 1.013 1-5	-	2.67 1.090 1-4	-
Lombard-10	-	-	2.25 1.073 1-4	-	3.04 1.197 1-5
Emilian-11	-	-	filler	1.96 1.042 1-4	-
Tuscan-12	-	-	-	filler	2.71 1.334 1-5

Table 4.52. Question 7: *attitude* towards the target areas, on a scale from 1 (most negative attitude) to 5 (most positive attitude). Mean score, *SD*, min-max.

Most score means were in the low-middle range: 7 means out of 9 were comprised between 1.96 and 2.91. Two mean scores were slightly above the neutral 'don't dislike or like' (3.04 and 3.38).

QUESTION 8. Figures 4.50 and 4.51 summarize participants' responses to question 8, which concerned attitude towards target languages: on a scale from 1 (horrible) to 5 (very beautiful), "how beautiful do the dialects of [the target language 'at west'] sound to you? And the dialects of [the target language 'at east']?"



Figure 4.50. Question 8: *attitude* towards target language 'at west'. On a scale from 1 to 5, "how beautiful do the dialects of [the target language 'at west'] sound to you?" The little circles and the asterisks indicate outlier and extreme outlier values respectively, scored by participants 28, 30, 31, 46, 74, 102, 103, 112 and 113, according to the numbering that identifies each of the 143 participants in the entire chain *B*.



Figure 4.51. Question 8: *attitude* towards target language 'at east'. On a scale from 1 to 5, "how beautiful do the dialects of [the target language 'at east'] sound to you?"

Tables 4.53 and 4.54 present two alternative ways of displaying the data above.

		Participants							
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11	Tuscan-12			
Target language 'at west'	3.70 .822 2-5	3.96 .859 2-5	3.25 .847 2-5	3.38 .770 1-5	3.13 .537 2-5	3.54 .833 2-5			
Target language 'at east'	3.52 .790 2-5	filler	3.50 .590 2-4	3.67 .565 3-5	filler	filler			

Table 4.5	3. Question	8: attitude	towards the t	arget language	s, on a scale	from 1 (ł	orrible) to	5 (very bea	utiful).
Mean, SL), min-max.	The data	points are dis	played in order	from 'west'	to 'east'.	•		

	Target language Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participants Occitan-7	-	3.52 .790 2-5	3.70 .822 2-5	-	-
Occitan-8	3.96 .859 2-5	-	filler	-	-
Piedmon9	-	3.25 .847 2-5	-	3.50 .590 2-4	-
Lombard-10	-	-	3.38 .770 1-5	-	3.67 .565 3-5
Emilian-11	-	-	filler	3.13 .537 2-5	-
Tuscan-12	-	-	-	filler	3.54 .833 2-5

 Table 4.54. Question 8: attitude towards the target languages, on a scale from 1 (horrible) to 5 (very beautiful).

 Mean, SD, min-max.

All score means were in the middle-high range, falling between 3.13 and 3.96.

QUESTION 9. Figures 4.52 and 4.53 summarize participants' responses to question 9, addressing the behavioural component of language attitude (see Schoel et al., 2013): on a scale from 1 (not at all) to 5 (very much), "how would you like to speak a dialect of [the target language 'at west']? And a dialect of [the target language 'at east']?".



Figure 4.52. Question 9: *attitude* towards target language 'at west'. On a scale from 1 to 5, "how would you like to speak a dialect of [the target language 'at west']?" The little circles indicate outlier values scored by participants 22, 123 and 127, according to the numbering that identifies each of the 143 participants in the entire chain *B*.



Figure 4.53. Question 9: *attitude* towards target language 'at east'. On a scale from 1 to 5, "how would you like to speak a dialect of [the target language 'at east']?" The little circles indicate outlier values scored by participants 22, 50 and 63, according to the numbering that identifies each of the 143 participants in the entire chain *B*.

Tables 4.55 and 4.56 present two alternative ways of displaying the data above.

	Participants						
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11	Tuscan-12	
Target language 'at west'	3.52 .898 1-5	4.46 .658 3-5	2.88 1.035 1-4	2.75 .989 1-4	2.42 1.139 1-5	3.29 .955 1-5	
Target language 'at east'	3.61 .891 1-5	filler	3.08 .974 1-4	3.33 1.129 1-5	filler	filler	

Table 4.55. Question 9: attitudes towards the target languages, on a scale from 1 (not at all) to 5 (very much).
Mean score, SD, min-max. The data points are displayed in order from west to east.

	Target language				
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participants	-	3.61	3.52	-	-
Occitan-7		.891	.898		
		1-5	1-5		
Occitan-8	4.46	-	filler	-	-
	.658				
	3-5				
Piedmon9	-	2.88	-	3.08	-
		1.035		.974	
		1-4		1-4	
Lombard-10	-	-	2.75	-	3.33
			.989		1.129
			1-4		1-5
Emilian-11	-	-	filler	2.42	-
				1.139	
				1-5	
Tuscan-12	-	-	-	filler	3.29
					.955
					1-5

Table 4.56. Question 9: *attitudes* towards the target languages, on a scale from 1 (not at all) to 5 (very much). Mean score, *SD*, min-max.

In this case too, as for the previous question equally concerning attitudes towards target languages, most score means (6 out of 9) were in the middle-high range, falling between 3.08 and 4.46. Three mean scores were slightly lower than the neutral point 'don't disagree or agree' (2.42, 2.75, 2.88).

4.3.*B*.4.6. CONTROL VARIABLES: MULTIPLE REGRESSION ANALYSIS

In order to control for the seven variables⁶⁶ presented above, a check was done to determine whether they had an effect on intelligibility score. This was done by means of two distinct multiple regressions, one having scores on stimuli 'at west' as dependent variable, the other having scores on stimuli 'at east' as dependent variable. As shown above (Section 4.3.B.4), two independent multiple regressions were run because the participants were asked separate questions about the area/language 'at west' and the area/language 'at east'. The potential effect of the control variables had to be tested while controlling for 'data point'. This was because each data point corresponded to a different participant's native geolect, and to two different target geolects, respectively 'at west' and 'at east'. Therefore, running the multiple regressions without controlling for 'data point' would have made 'data point' act as confounding variable (see Section 4.3.*B*.4, footnote 65). 'Data point' is a nominal variable with as many values as the number of data points having an experimental target geolect (i.e., it was not a filler geolect). Therefore, for the multiple regression with scores 'at west', 'data point' had six values, as the number of data points having an experimental target geolect at west', namely Occitan-7, Occitan-8, Piedmontese-9, Lombard-10, Emilian-11, Tuscan-12. On the other hand, for the multiple regression with scores 'at east', 'data point' only had three values, corresponding to Occitan-7, Piedmontese-9 and Lombard-10, since geolect 'at east' was a filler for the other three data points. Nominal variables with more than 2 values cannot enter a multiple regression directly, rather they must be transformed into as many dummy variables as the number of the values that they can take⁶⁷ (i.e., in this case, as the number of data points having an experimental target geolect). Therefore, I created 6 dummy variables for the regression with scores 'at west' and 3 dummy variables for the regression with scores 'at east'. Then, following standard procedure, respectively 5 (i.e. 6 minus 1) and 2 (i.e. 3 minus 1) of the dummy variables entered the respective regression analysis (since the 6th and the 3rd dummy variables respectively would have been redundant with respect to the other dummy variables).

⁶⁶ Beside gender of voice and participant gender, whose potential effect was already tested for above (Sections 4.3.*B*.2 and 4.3.*B*.3).

⁶⁷ See UCLA (University of California Los Angeles) web page *Introduction to regression with SPSS lesson 3: SPSS regressions with categorical predictors* <u>https://stats.oarc.ucla.edu/spss/seminars/introduction-to-regression-with-spss/introreg-lesson3/</u>. See also a tutorial video by H. Michael Crowson, University of Oklahoma: <u>https://www.youtube.com/watch?v=XGlbGaOsV9U</u>.

For each multiple regression, the following null hypotheses were formulated with the respective alternative hypotheses.

The *main* null hypothesis (H_01) is that there is no relationship between the intelligibility score and the control variables as a whole (i.e. the model). The alternative hypothesis (H_11) is that there is such relationship.

- H₀ 1: There is no relationship between intelligibility score and foreign language competence, Latin language competence, contact with target areas, exposure to target languages, and attitudes towards target areas and languages.
- H₁ 1: There is a relationship between intelligibility score and the control variables listed above.

A separate null hypothesis was also formulated for each of the seven control variables:

in the presence of all other control variables, there is no relationship between intelligibility score and any of the following:

- *foreign language competence* (H₀2*a*);
- *Latin language competence* (H₀ 2*b*);
- *contact with target area* (H₀ 2*c*);
- *exposure to target language* (H₀2*d*);
- *attitudes towards target area* (H₀2*e*);
- *attitudes towards target language* (elicited by question 8) (H₀ 2*f*);
- *'behavioural' attitudes towards target language* (elicited by question 9) (H₀ 2g).

For each null hypotheses above, an alternative hypothesis was formulated:

• H₁ 2(*a-g*): In the presence of all other control variables, there is a relationship between intelligibility score and [the control variable concerned].

First, the assumptions of multiple regression (*i.* absence of outliers, *ii.* collinearity of data, *iii.* independence of errors, *iv.* random normal distribution of errors, *v.* homoscedasticity, *vi.* linearity of data, and *vii.* non-zero variances) were tested separately for:

- *intelligibility score on stimuli 'at west'* as dependent variable (in Section 4.3.*B*.4.6.1), and
- *intelligibility score on stimuli 'at east'* as dependent variable (in Section 4.3.*B*.4.6.2).

4.3.B.4.6.1. Testing the assumptions of multiple regression with intelligibility score on stimuli 'at west' as dependent variable

i. An analysis of standard residuals was carried out, which showed that the data contained *no outliers*. The Minimum Standardised Residual value was greater than -3.29 and the Maximum Standardised Residual value was smaller than 3.29 (Std. Residual Min = -3.092, Std. Residual Max = 2.343).

ii. As shown in Table 4.57, the data met the assumption of *collinearity*. In fact, the Tolerance values were never smaller than .1 and the Variance Inflation Factor values (VIF) were never greater that 10:

	Tolerance	VIF
Foreign language 1 competence	.500	2.001
Foreign language 2 competence	.716	1.397
Latin language competence	.714	1.401
Contact with target area 'at west'	.551	1.816
Exposure to target language 'at west'	.598	1.671
Attitude towards target area 'at west'	.710	1.409
Attitude towards target language 'at west' (Q8)	.656	1.524
Attitude towards target language 'at west' (Q9)	.495	2.022

Table 4.57. Testing the *collinearity of data* assumption: Tolerance and Variance Inflation Factor (VIF) values of the control variables and 'data point' (independent) variable. With score on stimuli 'at west' as dependent variable.

iii. The data also met the assumption of *independence of errors*, as the Durbin-Watson value was between 1 and 3, and thus close to 2 (Durbin-Watson value = 2.098).

iv. The histogram of standardised residuals (reported in Figure 4.54) indicated that the data contained *normally distributed errors*, as did the normal P-P plot of standardised residuals (reported in Figure 4.55), which showed dots that, although not exactly on the line, were close to it.



Figure 4.54. Testing the *normal distribution of errors* assumption: Regression Standardized Residual. With score on stimuli 'at west' as dependent variable.



Figure 4.55. Testing the *normal distribution of errors* assumption: Regression Standardized Residual. With score on stimuli 'at west' as dependent variable.

v. - vi. The scatterplot of standardised predicted values (reported in Figure 4.56) showed that the data met the assumptions of *homogeneity of variance* and *linearity*.



Figure 4.56. Testing the *homogeneity of variance* and *linearity* assumptions: Regression Standardized Residual Value. With score on stimuli 'at west' as dependent variable.

vii. As shown in Table 4.58, the data also met the assumption of *non-zero variances*, as all the Variance values were greater than zero:

	Variance
Score on stimuli 'at west'	8.290
Foreign language 1 competence	.888
Foreign language 2 competence	.097
Latin language competence	.211
Contact with target area 'at west'	.563
Exposure to target language 'at west'	.491
Attitude towards target area 'at west'	1.361
Attitude towards target language 'at west' (Q8)	.674
Attitude towards target language 'at west' (Q9)	1.326

 Table 4.58. Testing the non-zero variance assumption: Variance values. With score on stimuli 'at west' as dependent variable.

4.3.B.4.6.2. Testing the Assumptions of multiple regression with intelligibility score on stimuli 'At EAST' As dependent variable

i. An analysis of standard residuals was carried out which showed that the data contained *no outliers*. The Minimum Standardised Residual value was greater than -3.29 and the Maximum Standardised Residual value was smaller than 3.29 (Std. Residual Min = -2.193, Std. Residual Max = 1.639).

ii. As shown in Table 4.59, the data met the assumption of *collinearity*. Indeed, the Tolerance values were never smaller than .1 and the Variance Inflation Factor values (VIF) were never greater than 10:

	Tolerance	VIF
Foreign language 1 competence	.746	1.340
Foreign language 2 competence	.816	1.225
Latin language competence	.696	1.436
Contact with target area 'at east'	.639	1.565
Exposure to target language 'at east'	.793	1.261
Attitude towards target area 'at east'	.661	1.512
Attitude towards target language 'at east' (Q8)	.668	1.497
Attitude towards target language 'at east' (Q9)	.538	1.859

 Table 4.59. Testing for collinearity of data: Tolerance and Variance Inflation Factor (VIF) values of the control variables and 'data point' (independent) variable. With score on stimuli 'at east' as dependent variable.

iii. The data also met the assumption of *independence of errors*, as the Durbin-Watson value was between 1 and 3, and in fact close to 2 (Durbin-Watson value = 2.160).

iv. The histogram of standardised residuals (reported in Figure 4.57) indicated that the data contained approximately *normally distributed errors*, as did the normal P-P plot of standardised residuals (reported in Figure 4.58), which showed dots that, although not exactly on the line, were close to it.



Figure 4.57. Testing for *normal distribution of errors*: Regression Standardized Residual. With score on stimuli 'at east' as dependent variable.



Figure 4.58. Testing for *normal distribution of errors*: Regression Standardized Residual. With score on stimuli 'at east' as dependent variable.

v. - *vi.* The scatterplot of standardised predicted values (reported in Figure 4.59) showed that the data met the assumptions of *homogeneity of variance* and *linearity*.



Figure 4.59. Testing for *homogeneity of variance* and *linearity*: Regression Standardized Residual Value. With score on stimuli 'at east' as dependent variable.

vii. As shown in Table 4.60, the data also met the assumption of *non-zero variances*, as all the Variance values were greater than zero:

	Variance
Score on stimuli 'at east'	1.980
Foreign language 1 competence	.338
Foreign language 2 competence	.054
Latin language competence	.161
Contact with target area 'at east'	.339
Exposure to target language 'at east'	.123
Attitude towards target area 'at east'	1.169
Attitude towards target language 'at east' (Q8)	.421
Attitude towards target language 'at east' (Q9)	1.027

 Table 4.60. Testing for non-zero variance: Variance values. With score on stimuli

 'at east' as dependent variable.

All these tests indicated that all the assumptions of multiple regression were met for both designs, namely:

- with *intelligibility score on stimuli 'at west'* as dependent variable, and
- with *intelligibility score on stimuli 'at east'* as dependent variable.

Therefore, two multiple regressions were run, to see whether the control variables influenced intelligibility scores.

4.3.B.4.6.3. MULTIPLE REGRESSION WITH 'INTELLIGIBILITY SCORE ON STIMULI AT WEST' AS DEPENDENT VARIABLE. A multiple regression was conducted on the seven control variables while controlling for 'data point'. Using the 'enter' method, it was found that the model explains a significant amount of the variance in the intelligibility score (F(13, 129) = 38.531, p < .001, $R^2 = .795$, $R^{2 \text{ Adjusted}} = .775$).

The analysis also showed that 'data point' alone had an effect on intelligibility score, explaining a significant amount of the variance in the intelligibility score ($F(2, 68) = 95.762, p < .001, R^2 = .738, R^2 \text{ Adjusted} = .730$). On the contrary, there is no evidence that any of the control variables individually had an effect on intelligibility score (see Table 4.61).

Control variables	Beta	t	Sig.
Foreign language 1 competence	.040	.709	.480
Foreign language 2 competence	028	589	.557
Latin language competence	.032	.679	.498
Contact with target area 'at west'	.020	.376	.707
Exposure to target language 'at west'	003	064	.949
Attitude towards target area 'at west'	.039	824	.412
Attitude towards target language 'at west' (Q8)	.034	.691	.491
Attitude towards target language 'at west' (Q9)	044	777	.438



4.3.B.4.6.4. MULTIPLE REGRESSION WITH 'INTELLIGIBILITY SCORE ON STIMULI AT EAST' AS DEPENDENT VARIABLE. A multiple regression was conducted on the seven control variables while controlling for 'data point'. It was used the 'enter' method. No evidence was found that the model significantly affected the intelligibility score ($F(10, 60) = .690, p < .730, R^2 = .103, R^{2 \text{ Adjusted}} = -.046$).

Moreover, no evidence was found that 'data point' alone had an effect on intelligibility score (F (2, 68) = .708, p < .496 ns, $R^2 = .020$, $R^{2 \text{ Adjusted}} = -.008$). Also, there is no evidence that any of the control variables individually had an effect on intelligibility score (see Table 4.62):

Control variable	Beta	t	Sig.
Foreign language 1 competence	022	156	.877
Foreign language 2 competence	.196	1.450	.152
Latin language competence	.042	.286	.776
Contact with target area 'at east'	004	025	.980
Exposure to target language 'at east'	.079	.576	.567
Attitude towards target area 'at east'	.163	1.082	.284
Attitude towards target language 'at east' (Q8)	.181	1.209	.231
Attitude towards target language 'at east' (Q9)	136	814	.419

Table 4.62. Results of multiple regression with *intelligibility score on stimuli 'at east'* as dependent variable. *Beta*, *t* and *p* values.

4.3.B.4.6.5. SUMMING UP RESULTS OF MULTIPLE REGRESSIONS. As noted above, two separate multiple regression analyses were conducted. One used *intelligibility scores on stimuli 'at west'* as the dependent variable, while the other used *intelligibility scores on stimuli 'at east'* as the dependent variable. Neither provided evidence that any of the control variables (language competence, contact with target area, exposure to target language, attitudes) individually affected the intelligibility of target geolects. Therefore, these control variables will not be discussed further.

4.3.*B*.5. COMPARING INTELLIGIBILITY SCORES

This section presents the results of an empirical test of the post-Wartburg hypothesis. Section 4.3.B.5.1 presents the estimates of the population intelligibility mean scores. With reference to Prediction 1, Section 4.3.B.5.2 presents a comparison of the intelligibility scores across the Apennines with the intelligibility scores across the Occitan-Piedmontese border. With reference to Prediction 1-*a*, Section 4.3.B.5.3 presents a comparison of the intelligibility scores across the Apennines with the intelligibility scores across the Alps. With reference to Prediction 2, Section 4.3.B.5.4 presents a comparison of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Alps. With reference to Prediction 3^* , Section 4.3.B.5.5 compares the intelligibility scores across the

Apennines with the intelligibility scores across the Po valley. Still with reference to Prediction 3*, Section 4.3.*B*.5.6 compares the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Po valley.

4.3.B.5.1. INTELLIGIBILITY ESTIMATES AND TESTS OF NORMALITY

Estimates of population intelligibility mean scores were calculated. The results were reported in Table 4.42 above and are presented again in Table 4.63.

	Stimuli Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participant Occitan-7	-	85.71% 80.86-90.57	49.71 44.36-55.00	-	-
Occitan-8	73.21 68.57-77.86	-	filler	-	-
Piedmontese-9	-	88.99 85.55-92.43	-	85.12 80.86-89.38	-
Lombard-10	-	-	70.24 66.72-73.76	-	82.44 78.67-86.21
Emilian-11	-	-	filler	83.93 80.57-87.29	-
Tuscan-12	-	-	-	filler	37.50 33.60-41.40

Table 4.63 (repeated from Table 4.42 for convenience). Mean percentage intelligibility scores and the respective estimates of population means (95% confidence interval for mean).

Figure 4.60 displays the intelligibility scores reported above, which are all the intelligibility scores concerned in chain *B* study. Boxplot (*i*) corresponds to Tuscan-12 participants' intelligibility score on Emilian-11 stimuli.



Figure 4.60 (merging Figures 4.37 and 4.38). Boxplots for the intelligibility scores compared in chain *B* study, out of 14 stimuli.

For convenience, in Table 4.64 I report the results of the Shapiro-Wilk tests of normality for the intelligibility scores of all data points. These results were relevant when selecting the design of the various tests of significance that should be run in testing the predictions made by the post-Wartburg hypothesis (and whose results in turn are presented in the following sections), since normal distribution of data is a necessary assumption of a parametric test of significance, besides equality of variance. Therefore, when both the sets of scores involved had a normal distribution, a Levene's test of equality of variance was also performed for the same sets of scores. In cases where both the assumptions of normal distribution and equality of variance were met, a parametric test of significance was run. In the other cases, a non-parametric test of significance was run.

	Stimuli				
	Occitan-7	Occitan-8	Piedmon9	Lombard-10	Emilian-11
Participant	-	.914* (23)	.921 (23)	-	-
Occitan-7		.049	.070 ns		
Occitan-8	.915* (24)	-	filler	-	-
	.045				
Piedmontese-9	-	.859* (24)	-	.916* (24)	-
		.003		.047	
Lombard-10	-	-	.905* (24)	-	.930 (24)
			.028		.098 ns
Emilian-11	-	-	filler	.892* (24)	-
				.015	
Tuscan-12	-	-	-	filler	.931 (24)
					.105 ns

 Table 4.64. Shapiro-Wilk test of normality results for intelligibility scores: W-value (degrees of freedom) and p-value.

Table 4.65 is an alternative way of displaying the results above.

Participants	Score on stimuli 'at west'		Score on stimuli 'at east'	
	W (df)	p	W (df)	p
Occitan-7	.921 (23)	.070 ns	.914* (23)	.049
Occitan-8	.915* (24)	.045	filler	-
Piedmontese-9	.859* (24)	.003	.916* (24)	.047
Lombard-10	.905* (24)	.028	.930 (24)	.098 ns
Emilian-11	.892* (24)	.015	filler	-
Tuscan-12	.931 (24)	.105 ns	filler	-

Table 4.65. Shapiro-Wilk test of normality results for intelligibility scores: *W*-value (degrees of freedom) and *p*-value.

4.3.*B*.5.2. Comparing intelligibility scores across the Emilian-Tuscan border with intelligibility scores across the Occitan-Piedmontese border

With reference to Prediction 1 (see Sections 4.1.2.1 and 4.2.5.1 above)⁶⁸, this section compares:

- the intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli with the intelligibility score obtained
 - a. by Occitan-7 participants on Piedmontese-9 stimuli, and
 - b. by Piedmontese-9 participants on Occitan-8 stimuli.

In comparison *a*, Occitan-7 participants were used instead of the expected Occitan-8 participants. This is because, as noted in Section 4.2.1.1, Occitan-speaking dwellers of the administratively Italian side of the western Alps (Occitan-8) normally speak Piedmontese too, so their intelligibility score on Piedmontese-9 stimuli would not be informative for the current aims.

Therefore, a null hypothesis was formulated for each of the pairs of scores concerned. The null hypotheses (H_0a , b) are that there is no difference between intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli and intelligibility scores obtained:

- a. by Occitan-7 participants on Piedmontese-9 stimuli, and
- b. by Piedmontese-9 participants on Occitan-8 stimuli.

The alternative hypotheses (H₁ a, b) state that there is difference between those intelligibility scores.

Concerning the sets of scores compared in *a*, they both have normal distribution (see Table 4.64). This means that, to decide whether to test for their difference by a parametric or a non-parametric test of significance, it should first be determined whether the two sets of scores show homogeneity of variance, which is, along with normal distribution of both scores, a necessary assumption of a parametric test of significance.

A Levene's test of equality of variance was therefore conducted between Occitan-7 participants' intelligibility score on Piedmontese-9 stimuli and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli. No significant difference was found between the variances of the two sets of scores (F(1, 45) = 1.611, p = .211, ns).

⁶⁸ Prediction 1: today (and already in von Wartburg's times) intelligibility is higher between geolects spoken at the two sides of the Apennines—namely between Tuscan-12 and Emilian-11—than between Piedmontese-9 and Occitan-8 (see Section 4.2.5.1).

Consequently, a two-independent-samples t-test was conducted between Occitan-7 participants' intelligibility score on Piedmontese-9 stimuli and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli. The two sets of scores were statistically significantly different (t (45) = 3.857, p < .001).

Concerning scores compared in *b*, a (non-parametric, see Table 4.64) Mann-Whitney U twoindependent-samples test of significance was conducted between Piedmontese-9 participants' intelligibility score on Occitan-8 stimuli and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli. The two sets of scores were statistically significantly different (U = 0.0, p < .001).

Therefore, both of the null hypotheses ($H_0 a$, b) should be rejected, since Tuscan-12 participants' intelligibility score on Emilian-11 stimuli were statistically significantly different from both the other intelligibility scores, such that Tuscan-12 participants scored lower than Occitan-7 participants and lower than Piedmontese-9 participants, as shown in Table 4.66 (data taken from Tables 4.42 and 4.43) and Figure 4.61:

	Percent	Confidence
	confidence	interval for mean
	interval for mean	(95%) out of 14
	(95%)	stimuli
<i>a</i> . Occitan-7 participants' intelligibility score on Piedmon9 stimuli	44.36 - 55.00 %	6.21 - 7.70
b. Piedmon9 participants' intelligibility score on Occitan-8 stimuli	85.55 - 92.43 %	11.98 - 12.94
c. Tuscan-12 participants' intelligibility score on Emilian-11 stimuli	33.60 - 41.40 %	4.70 - 5.80

Table 4.66 (data taken from Tables 4.42 and 4.43). Estimates of intelligibility scores: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.



Figure 4.61. Boxplots for the intelligibility scores compared and reported in Table 4.37.

In chain *A* study (Section 4.3.*A*.5.2), we have seen that no statistically significant difference was found between the scores obtained by Occitan-1 (Fr) participants on Occitan-2 (It) stimuli and on the geographically more distant (and according to the literature less closely related genealogically, see Section 4.2.1.4) Piedmontese-3 stimuli.

Although not crucial to the aims of the present study, we have seen that future research would be useful to, in addition, attempt some interpretation of those results. To provide further information in this respect, and possibly further motivation for future research, it seemed useful to ascertain whether the sequence of intelligibility scores presented above (obtained across the Alps in chain A) mirror the one observed in the analogous position of chain B. Therefore, I tested for the difference between Occitan-7 participants' scores on Occitan-8 stimuli and on Piedmontese-9 stimuli.

The null hypothesis is that there is no difference between intelligibility scores obtained by Occitan-7 participants on Occitan-8 stimuli and on Piedmontese-9 stimuli.

The alternative hypothesis is that there is difference between those intelligibility scores.

A Wilcoxon Signed-Ranks two-related-samples test was therefore conducted. The two sets of scores differed significantly (Z = -4.025, p < .001).

Figure 4.62 displays the two intelligibility scores.



Figure 4.62. Boxplots for Occitan-7 participants' intelligibility scores on Occitan-8 and Piedmontese-9 stimuli.

In contrast to the results from the analogous test in chain *A* (Section 4.3.*A*.5.2), intelligibility scores obtained by Occitan-7 participants on Occitan-8 stimuli were significantly higher than those obtained by the same participants on Piedmontese-9 stimuli.

4.3.*B*.5.3. Comparing intelligibility scores across the Emilian-Tuscan Border with intelligibility scores across the Alpine Ridge

With reference to Prediction 1-*a* (see Sections 4.1.2.1 and 4.2.5.1)⁶⁹, this section compares:

- the intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli with the intelligibility score obtained
 - a. by Occitan-7 participants on Occitan-8 stimuli, and
 - b. by Occitan-8 participants on Occitan-7 stimuli.

⁶⁹ Prediction 1-*a*: today intelligibility is higher between the geolects spoken at the two sides of the Apennines—namely between Tuscan-12 and Emilian-11—than between the geolects spoken at the two sides of the Alps—namely between Occitan-8 and Occitan-7 (see Figures 4.2 and 4.3, and Section 4.2.5.1).
A null hypothesis was formulated for each of the two pairs of scores concerned. The null hypotheses ($H_0 a$, b) are that there is no difference between intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli and intelligibility scores obtained:

- a. by Occitan-7 participants on Occitan-8 stimuli, and
- b. by Occitan-8 participants on Occitan-7 stimuli.

The alternative hypotheses $(H_1 a, b)$ are that there is difference between those intelligibility scores.

A (non-parametric, see Table 4.64) Mann-Whitney U two-independent-samples test⁷⁰ of significance was therefore conducted between each of the pairs of intelligibility scores concerned. The results are displayed in Table 4.67.

Test for the difference between	U	р
Tuscan-12 participants' intelligibility score on Emilian-11 stimuli, and		
a. Occitan-7 participants' intelligibility score on Occitan-8 stimuli	0.0	< .001
b. Occitan-8 participants' intelligibility score on Occitan-7 stimuli	7.0	< .001

 Table 4.67. Results of Mann-Whitney U two-independent-samples test of significance: U-value and p-value.

Both null hypotheses (H₀ *a*, *b*) should be rejected. Tuscan-12 participants' intelligibility score on Emilian-11 stimuli was statistically significantly different from both the other intelligibility scores, such that Tuscan-12 participants scored lower than Occitan-7 participants and lower than Occitan-8 participants, as shown in Table 4.68 (data taken from Tables 4.42 and 4.43) and Figure 4.63:

	Percent	Confidence
	confidence	interval for mean
	interval for mean	(95%) out of 14
	(95%)	stimuli
<i>a</i> . Occitan-7 participants' intell. score on Occitan-8 stimuli	80.86 - 90.57 %	11.32 - 12.68
b. Occitan-8 participants' intell. score on Occitan-7 stimuli	68.57 - 77.86 %	9.60 - 10.90
c. Tuscan-12 participants' intell. score on Emilian-11 stimuli	33.60 - 41.40 %	4.70 - 5.80

Table 4.68 (data taken from Tables 4.42 and 4.43). Estimates of intelligibility scores: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.

⁷⁰ Namely, a non-parametric test, see Table 4.63.



Figure 4.63. Boxplots for the intelligibility scores compared and reported in Table 4.39 above.

4.3.*B*.5.4. Comparing the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Alps

With reference to Prediction 2 (see Sections 4.1.2.1 and 4.2.5.1)⁷¹, this section makes two comparisons, I and II. These allow us to compare the magnitudes of difference concerning intelligibility scores collected in *all possible* directions, namely on stimuli 'at west' and on stimuli 'at east' when possible or relevant.

- I. First, the following will compare:
 - *a.* the magnitude of the *possible* difference between
 - Lombard-10 participants' intelligibility score on Emilian-11 stimuli, and
 - Tuscan-12 participants' intelligibility score on Emilian-11 stimuli,
 - b. with the magnitude of the possible difference between

⁷¹ Prediction 2: today (and already in von Wartburg's times) intelligibility decreases more abruptly across the Alps (namely along the portion of chain running from Occitan-7, through Occitan-8 to Piedmontese-9) than across the Apennines (namely along the portion of chain running from Lombard-10, through Emilian-11 to Tuscan-12) (see Figures 4.2 and 4.3, and Section 4.2.5.1).

- Occitan-7 participants' intelligibility score on Occitan-8 stimuli, and
- Piedmontese-9 participants' intelligibility score on Occitan-8 stimuli.

Two null hypotheses (H₀ a, b) were formulated, with the respective alternative hypotheses (H₁ a, b).

H₀ *a*: Lombard-10 participants' score = Tuscan-12 participants' score;

H₁ *a*: Lombard-10 participants' score \neq Tuscan-12 participants' score.

H₀ *b*: Occitan-7 participants' score = Piedmontese-9 participants' score;

H₁ b: Occitan-7 participants' score \neq Piedmontese-9 participants' score.

Concerning the scores in *a* (both normally distributed, see Table 4.64), a Levene's test of equality of variance was conducted between Lombard-10 participants' and Tuscan-12 participants' intelligibility scores on Emilian-11 stimuli. No significant difference was found between the variances of the two sets of scores (F(1, 46) = .004, p = .947, ns).

Therefore, a two-independent-samples t-test was conducted. The two sets of scores differed significantly (t(46) = 17.131, p < .001). Therefore, the null hypothesis H₀ *a* was rejected.

The magnitude of the difference just tested, namely between Lombard-10 participants' and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli, was calculated, resulting in a value of Cohen's d = 1.84, corresponding approximately to what has been described as a "huge"⁷² effect (Cohen 1988; Sawilowsky, 2009).

Concerning the scores in *b*, a Mann-Whitney U two-independent-samples test of significance was conducted. No significant difference was found between the two sets of scores (U = 232.5, p = .343, *ns*). Therefore, the null hypothesis H₀ *b* could not be rejected.

Results demonstrated that the magnitude of the difference in a, namely between Lombard-10 participants' and Tuscan-12 participants' intelligibility scores on Emilian-11 stimuli, is larger than the magnitude of the difference in b, namely between Occitan-7 participants' and Piedmontese-9

⁷² Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

participants' intelligibility scores on Occitan-8 stimuli.⁷³ Indeed, there was no significant difference between Occitan-7 participants' score and Piedmontese-9 participants' score. Instead, the Tuscan-12 participants' score was significantly lower than Lombard-10 participants' score, and the size of the effect of 'data point' 'was "huge" (Cohen, 1988; Sawilowsky, 2009).

II. Second, the following will compare:

- *a*. the magnitude of the *possible* difference between
 - Emilian-11 participants' intelligibility score on Lombard-10 stimuli, and
 - o Tuscan-12 participants' intelligibility score on Emilian-11 stimuli,
- b. with the magnitude of the possible difference between
 - Occitan-8 participants' intelligibility score on Occitan-7 stimuli, and
 - Piedmontese-9 participants' intelligibility score on Occitan-8 stimuli.

Hence, two null hypotheses (H₀ a, b) were formulated, with the respective alternative hypotheses (H₁ a, b).

H₀ *a*: Emilian-11 participants' score = Tuscan-12 participants' score;

H₁*a*: Emilian-11 participants' score \neq Tuscan-12 participants' score.

 $H_0 b$: Occitan-8 participants' score = Piedmontese-9 participants' score;

H₁ *b*: Occitan-8 participants' score \neq Piedmontese-9 participants' score.

Concerning the scores in *a*, a Mann-Whitney U two-independent-samples test of significance was conducted. The two sets of scores differed (highly) significantly (U = .0, p < .001). Therefore, the null hypothesis H₀ *a* should be rejected.

Concerning the scores in *b*, a Mann-Whitney U two-independent-samples test of significance was conducted. The two sets of scores differed (highly) significantly (U = 71.5, p < .001). Therefore, the null hypothesis H₀ *b* should be rejected.

⁷³ Before presenting these results, a null hypothesis (and the respective alternative hypothesis) should actually be formulated, stating the non-difference between the magnitude of difference in *a* and the magnitude of difference in *b* (see Section 4.2.5.2). However, the results of the tests of significance just conducted (there is significant difference in *a*, no significant difference was found in *b*) made the explicit formulation of that null hypothesis unnecessary.

In both *a* and *b*, the scores differed significantly. A null hypothesis (H₀) should then be formulated. The null hypothesis (H₀) is that there is no difference between the magnitude of the difference in *a* and the magnitude of the difference in *b*. The alternative hypothesis (H₁) is that there is difference between those magnitudes of difference.

H₀: magnitude in a = magnitude in b.

H₁: magnitude in $a \neq$ magnitude in b.

Therefore, the magnitude of the difference in *a*, namely between Emilian-11 participants' intelligibility score on Lombard-10 stimuli and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli, was calculated, resulting in a value of Cohen's d = 1.73, corresponding to an approximately "huge"⁷⁴ effect (Cohen 1988; Sawilowsky, 2009).

Next, the magnitude of the difference in *b*, namely between Occitan-2 participants' intelligibility score on Occitan-1 stimuli and Piedmontese-3 participants' intelligibility score on Occitan-2 stimuli, was calculated, resulting in a value of Cohen's d = 1.31, corresponding to an approximately "very large"⁷⁵ effect (Cohen 1988; Sawilowsky, 2009).

The results of comparison II confirmed the results of comparison I. They demonstrated that the magnitude of the difference in *a*, namely between Emilian-11 participants' intelligibility score on Lombard-10 stimuli and Tuscan-12 participants' intelligibility scores on Emilian-11 stimuli, is indeed larger than the magnitude of the difference in *b*, namely between Occitan-8 participants' intelligibility scores on Occitan-7 stimuli and Piedmontese-9 participants' intelligibility scores on Occitan-8 stimuli. Indeed, in *a*, the magnitude of the difference was Cohen's d = 1.73 ("huge"), while in *b*, the size of the magnitude of the difference was Cohen's d = 1.31 ("very large") (Cohen, 1988; Sawilowsky, 2009).

⁷⁴ Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

⁷⁵ Cohen's *d* magnitudes: 0.2= small; 0.5= medium; 0.8= large (Cohen, 1988); 1.2= very large; 2.0= huge (Sawilowsky, 2009).

4.3.*B*.5.5. Comparing intelligibility scores across the Apennines with intelligibility scores across the Po valley

With reference to Prediction 3* (see Sections 4.1.2.1 and 4.2.5.1 above)⁷⁶, this section will compare:

- the intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli with the intelligibility score obtained
 - a. by Piedmontese-9 participants on Lombard-10 stimuli,
 - *b.* by Lombard-10 participants on Piedmontese-9 stimuli,
 - c. by Lombard-10 participants on Emilian-11 stimuli, and
 - *d.* by Emilian-11 participants on Lombard-10 stimuli.

A null hypothesis was formulated for each of the four pairs of scores concerned. The null hypotheses (H₀ *a*-*d*) are that there is no difference between the intelligibility score obtained by Tuscan-12 participants on Emilian-11 stimuli and the intelligibility score obtained:

a. by Piedmontese-9 participants on Lombard-10 stimuli,

b. by Lombard-10 participants on Piedmontese-9 stimuli,

- c. by Lombard-10 participants on Emilian-11 stimuli, and
- d. by Emilian-11 participants on Lombard-10 stimuli.

The alternative hypotheses ($H_1 a$ -d) are that there is difference between those pairs of intelligibility scores.

A Mann-Whitney U two-independent-samples test of significance was therefore conducted between the pairs of scores concerned in *a*, *b*, and *d*. The results are displayed in Table 4.69.

Test the difference between	U	р
Tuscan-12 participants' intelligibility score on Emilian-11 stimuli, and		
a. Piedmontese-9 participants' intelligibility score on Lombard-10 stimuli	0.0	< .001
b. Lombard-10 participants' intelligibility score on Piedmontese-9 stimuli	2.0	< .001
d. Emilian-11 participants' intelligibility score on Lombard-10 stimuli	0.0	< .001

Table 4.69. Results of Mann-Whitney U two-independent-samples test of significance: U-value and p-value.

⁷⁶ Prediction 3*: today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility is lower and decreases more abruptly than across the Apennines (namely along the portion of chain running from Lombard-10, through Emilian-11 to Tuscan-12) (see Figures 4.36 and 4.2, and Section 4.2.5.1).

In contrast to scores compared in a, b and d, the sets of scores compared in c are both normally distributed (see Table 4.64), and therefore a parametric test can be carried out, provided that the assumption of homogeneity of variance is also met.

A Levene's test of equality of variance was therefore conducted between Lombard-10 participants' and Tuscan-12 participants' intelligibility scores on Emilian-11 stimuli. No statistically significant difference was found between the variances of the two sets of scores (F(1, 46) = .004, p = .947, ns).

Consequently, a two-independent-samples t-test was conducted between Tuscan-12 participants' and Lombard-10 participants' intelligibility score on Emilian-11 stimuli. The two sets of scores differed statistically significantly (t (46) = 17.131, p < .001).

All the null hypotheses (H₀ *a-d*) should thus be rejected, since the Tuscan-12 participants' intelligibility score on Emilian-11 stimuli differed statistically significantly from all the other intelligibility scores investigated, such that Tuscan-12 participants scored lower than Piedmontese-9 participants, lower than Lombard-10 participants (on both Emilian-11 and Piedmontese-9 stimuli), and lower than Emilian-11 participants, as shown in Table 4.70 (data taken from Tables 4.42 and 4.43) and Figure 4.64:

	Percent confidence	Confidence
	interval for mean	interval for
		mean out of 14
		stimuli
a. Piedmon9 participants' intell. score on Lombard-10 stimuli	80.86 - 89.38 %	11.32 - 12-51
b. Lomb10 participants' intell. score on Piedmon9 stimuli	66.72 - 73.76 %	9.34 - 10.33
c. Lombard-10 participants' intell. score on Emilian-11 stimuli	78.67 - 86.21 %	11.01 - 12.07
d. Emilian-11 participants' intell. score on Lomb10 stimuli	80.57 - 87.29 %	11.28 - 12-22
e. Tuscan-12 participants' intell. score on Emilian-11 stimuli	33.60 - 41.40 %	4.70 - 5.80

Table 4.70 (data taken from Tables 4.42 and 4.43). Estimates of population intelligibility score: percentage confidence interval for mean (95%) and confidence interval for mean (95%) out of 14 stimuli.



Figure 4.64. Boxplots for the intelligibility scores compared and reported in Table 4.70 above.

4.3.*B*.5.6. Comparing the magnitude of the difference of intelligibility scores across the Apennines with the magnitude of the difference of intelligibility scores across the Po valley

With reference to Prediction 3* (see Sections 4.1.2.1 and 4.2.5.1 above)⁷⁷, this section compares:

- *a.* the magnitude (already calculated in Section 4.3.*B*.5.4) of the difference between intelligibility scores obtained
 - by Lombard-10 participants on Emilian-11 stimuli, and
 - o by Tuscan-12 participants on Emilian-11 stimuli,
- b. with the magnitude of the possible difference between the intelligibility scores obtained
 - o by Piedmontese-9 participants on Lombard-10 stimuli, and
 - o by Emilian-11 participants on Lombard-10 stimuli,
- c. and with the magnitude of the possible difference between the intelligibility scores obtained
 - o by Occitan-7 participants on Piedmontese-9 stimuli, and

⁷⁷ Prediction 3*: today no line can be found in the Po valley and Romagna, between the Alps and the Apennines, across which intelligibility is lower and decreases more abruptly than across the Apennines (namely along the portion of chain running from Lombard-10, through Emilian-11 to Tuscan-12) (see Figures 4.36 and 4.2, and Section 4.2.5.1).

• by Lombard-10 participants on Piedmontese-9 stimuli.

Note that in point *c*, as was done in Section 4.3.*B*.5.2, the unusable intelligibility scores obtained by the trilingual *Occitan-8* participants on Piedmontese-9 stimuli are replaced by the intelligibility scores obtained by the *Occitan-7* participants on Piedmontese-9 stimuli.

COMPARING MAGNITUDES OF DIFFERENCE IN a AND b. Concerning the comparison between the magnitudes of difference in *a* and *b*, a null hypothesis was formulated. The null hypothesis (H_0) is that there is no difference between:

- Piedmontese-9 participants' intelligibility score on Lombard-10 stimuli, and
- Emilian-11 participants' intelligibility score on Lombard-10 stimuli.

The alternative hypothesis (H₁) is that there is such difference.

H₀: Piedmontese-9 participants' score = Emilian-11 participants' score,

H₁: Piedmontese-9 participants' score \neq Emilian-11 participants' score.

A Mann-Whitney U two-independent-samples test was therefore conducted. No significant difference was found between the two groups (U = 249.00, p = .407, ns). The null hypothesis (H₀) could not be rejected.

Results demonstrated that the magnitude of the difference in *a*, namely between Lombard-10 participants' and Tuscan-12 participants' intelligibility score on Emilian-11 stimuli (already calculated in Section 4.3.*B*.5.4), is larger than the magnitude of the difference in *b*, namely between the Piedmontese-9 participants' and the Emilian-11 participants' intelligibility score on Lombard-10 stimuli. Indeed, no significant difference was found between the Piedmontese-9 participants' score and the Emilian-11 participants' score. Instead, the Tuscan-12 participants' score was significantly lower than the Lombard-10 participants' score, and the effect of 'data point' was "huge" (see Section 4.3.*B*.5.4 and footnote 51).

COMPARING MAGNITUDES OF DIFFERENCE IN a AND c. Concerning the comparison between the magnitudes of difference in *a* and *c*, a null hypothesis was formulated. The null hypothesis (H_0) is that there is no difference between:

- Occitan-7 participants' intelligibility score on Piedmontese-9 stimuli, and
- Lombard-10 participants' intelligibility score on Piedmontese-9 stimuli.

The alternative hypothesis (H_1) is that there is such difference.

Hence, a Mann-Whitney U two-independent-samples test was conducted. The two sets of scores differed significantly (U = 49.00, p < .001). The null hypothesis (H₀) should therefore be rejected. Hence, a null hypothesis (H₀) was formulated before ultimately comparing the magnitudes of difference in *a* and *c*. The null hypothesis (H₀) states that there is no difference between the magnitude of the difference in *a* (already calculated in Section 4.3.*B*.5.4) and the magnitude of the difference hypothesis (H₁) is that there is a difference between those magnitudes of difference.

H₀: magnitude in a = magnitude in c.

H₁: magnitude in $a \neq$ magnitude in c.

Therefore, the magnitude of the difference in *c* just tested, namely between Occitan-7 participants' and Lombard-10 participants' intelligibility scores on Piedmontese-9 stimuli, was calculated, resulting in a value of Cohen's d = 1.43, which corresponds to a "very large" effect size (see footnote 51).

These findings demonstrate that the magnitude of difference in *a*, namely between Lombard-10 participants' and Tuscan-12 participants' intelligibility scores on Emilian-11 stimuli, is larger than the magnitude of the difference in *c*, namely between Occitan-7 participants' and Lombard-10 participants' intelligibility scores on Piedmontese-9 stimuli. In fact, the magnitude of the difference between the score of the Occitan-7 group (in the French Alps) and the score of the Lombard-10 group was d = 1.43 ("very large"), while the magnitude of the difference between the score of the Score of the Tuscan-12 group was d = 1.84 ("huge") (see Section 4.3.*B*.5.4 and footnote 51).

4.3.*B*.6. INTERIM DISCUSSION OF CHAIN *B* RESULTS

As was done in relation to the results from chain *A* study (see Section 4.3.*A*.6), this section discusses the linguistic relevance of the results of each prediction testing, and considers whether they support or are incompatible with the post-Wartburg hypothesis.

As in Section 4.3.*A*.6, in the current section, presenting the linguistic relevance of the intelligibility test results will merely consist in presenting the differences between the intelligibility scores obtained by the *participants* (in this case of chain *B*) on *stimuli* in terms of differences in linguistic similarity between participants' *geolect* and target *geolect(s)*. Section 4.4 discusses the results of

both chain studies (A and B) and proposes their interpretation at some higher levels of generalization, based on previous dialectological literature and on some aspects of the design of the study.

Here again is Prediction 1, concisely recapped:

 Today intelligibility is higher between Tuscan and Emilian than between Piedmontese and Occitan of Italy.

Results showed that Prediction 1 is not borne out (see Section 4.3.B.5.2), providing evidence, on the contrary, that today intelligibility is *lower* between Tuscan and Emilian speakers than between Piedmontese speakers and Occitan speakers of Italy. This in turn indicates that there is no evidence that Emilian is now more similar to Tuscan than Piedmontese is to Occitan of Italy, as the post-Wartburg hypothesis implies. On the contrary, although based on partial data⁷⁸, these results provide evidence that Piedmontese is more similar to Occitan of Italy than Emilian is to Tuscan. This is incompatible with the post-Wartburg hypothesis and is, in fact, direct evidence against it. The fact that intelligibility between Occitan-8 and Piedmontese-9 geolects was measured only in one direction due to the trilingualism of Occitan speakers of Italy (Occitan-8) does not impede this analysis of the data, firstly because, as we have seen in Section 4.1.5, there is no evidence that the reverse measure would be significantly different in conditions of even mutual (non-)exposure. Secondly, the unusable intelligibility data of Occitan-8 trilingual participants (of Italy) on Piedmontese-9 stimuli were replaced by intelligibility data of the geographically more distant Occitan-7 participants (of France) on Piedmontese-9 stimuli (see Section 4.2.1.1). Therefore, the results provide evidence that Piedmontese is more similar not only to Occitan of Italy but even to Occitan of France than Emilian is to Tuscan. This means that the replacement of the unusable intelligibility data of Occitan-8 participants with data of Occitan-7 participants increases, rather than decreases, the linguistic informativeness of the results.

Here is Prediction 1-a concisely recapped:

1-a. Today intelligibility is higher between Tuscan and Emilian than between Occitan of Italy

⁷⁸ Recall, it is no longer possible to get *monolingual* Emilian-11 participants' score on Tuscan-12 stimuli. However, in section 4.1.5 we have seen that there is no evidence that such measure would be significantly different from the actually collected reverse one, in conditions of even mutual (non-)exposure. Therefore, these data should be regarded as 'partial' only in that they are quantitatively fewer than the ones collected between other pairs of data points (i.e. in both directions), and not as insufficiently informative.

and Occitan of France.

These results showed that Prediction 1-*a* is not borne out (see Section 4.3.*B*.5.3), providing evidence, on the contrary, that today intelligibility is *lower* between Tuscan and Emilian speakers than between Occitan speakers of Italy and Occitan speakers of France. This in turn indicates that there is no evidence that Emilian is more similar to Tuscan than Occitan of France is to Occitan of Italy, as the post-Wartburg hypothesis implies⁷⁹. On the contrary, although based on partial data⁸⁰, the results provide evidence that Occitan of France is more similar to Occitan of Italy than Emilian is to Tuscan. This is incompatible with the post-Wartburg hypothesis and is direct evidence against it.

Here is Prediction 2, concisely recapped:

2. Today intelligibility decreases more abruptly across the Alps than across the Apennines. The results show that Prediction 2 is not borne out (see Section 4.3.*B*.5.4), providing evidence, on the contrary, that today intelligibility decreases *less* abruptly across the Alps than across the Apennines. Indeed, the magnitude of the difference 'across the Apennines'⁸¹ is larger than the magnitude of the difference 'across the Alps'.⁸² This in turn indicates that there is no evidence that today linguistic similarity decreases more abruptly 'across the Alps' than 'across the Apennines', as the post-Wartburg hypothesis implies. Against the post-Wartburg hypothesis, these results on the contrary provide evidence that today linguistic similarity decreases more abruptly 'across the Alps' than 'across the Alps'.

Finally, Prediction 3* stated:

3*. Today no line can be found in the Po valley, between the Alps and the Apennines, across which intelligibility *(i)* is lower than and *(ii)* decreases more abruptly than across the Apennines.

The results show that Prediction $3^{*}(i)$ is borne out (see Section 4.3.*B*.5.5). They also show that Prediction $3^{*}(ii)$ is borne out (see Section 4.3.*B*.5.6), since the magnitude of difference 'across the

⁷⁹ Actually, a more precise formulation of this phrase—but probably less readily readable in this section—would be "as the counter-conjecture a (see section 4.1.2.1) instead implies".

⁸⁰ See footnote 78.

⁸¹ At this level of generalization, this expression means 'across *the three geolects actually investigated* that are spoken at the two sides of the Apennines'.

⁸² At this level of generalization, this expression means 'across *the three geolects actually investigated* that are spoken at the two sides of the Alps'.

Apennines' (see 4.3.*B*.5.4) is larger than the magnitude of difference measured along both the other two chain segments investigated, namely the segment including Piedmontese-9 – Lombard-10 – Emilian-11, where actually no significant difference was found, and the segment including Occitan-7 – Piedmontese-9 – Lombard-10. These results provide evidence that today intelligibility decreases more abruptly 'across the Apennines'⁸³ than across any segment of the chain included between the French Alps and the Emilian Apennines. This in turn indicates that there is evidence that the whole Po valley remains linguistically united, forming with Alpine Occitania of France a continuum which is smoother than the continuum that they form with Tuscan.

In summary, the results obtained from chain B, like those obtained from chain A (see Section 4.3.A.6), are incompatible with the post-Wartburg hypothesis and provide direct evidence against it.

4.3.1. COROLLARY: THE STRONG INTERNAL ABSTAND UNITY OF GALLO-"ITALIC"

As a corollary⁸⁴ of the current study, results also provided empirical evidence that the internal *Abstand*-based unity of Gallo-"Italic" is *strong*, with respect to *both* the bordering linguistic areas: not only the Tuscan one but also—albeit in a smaller measure—the Occitan one. Table 4.71 below reports the mean scores and confidence intervals for each pair of participant locality – stimulus locality. The values obtained by Gallo-"Italic" participants on Gallo-"Italic" stimuli are emphasised in boldface.

⁸³ See footnote 81.

⁸⁴ That the internal linguistic unity of Gallo-"Italic" is currently strong or not is not relevant in order to test the post-Wartburg hypothesis.

	Chain		Chain B				
Stimuli	Participants	М	С.І.	Stimuli	Participants	М	C.I.
\$				•			
Occitan It	Occitan Fr	51.93	45.86-58.07	Occitan It	Occitan Fr	85.71	80.86-90.57
Piedmon.	Occitan Fr	55.21	46.86-63.50	Piedmon.	Occitan Fr	49.71	44.36-55.00
Occitan Fr	Occitan It	66.36	62.86-69.86	Occitan Fr	Occitan It	73.21	68.57-77.86
Occitan It	Piedmon.	52.07	49.36-54.86	Occitan It	Piedmon.	88.99	85.55-92.43
Emilian	Piedmon.	85.43	79.71-91.14	Lombard	Piedmon.	85.12	80.86-89.38
Piedmon.	Emilian	78.00	74.64-81.29	Piedmon.	Lombard	70.24	66.72-73.76
Romagnol	Emilian	83.93	79.43-88.43	Emilian	Lombard	82.44	78.67-86.21
Emilian	Romagnol	83.36	78.93-87.79	Lombard	Emilian	83.93	80.57-87.29
Romagnol	Tuscan	36.64	31.79-41.43	Emilian	Tuscan	37.50	33.60-41.40

 Table 4.71 (results taken from Tables 4.11 and 4.41). Mean score and confidence interval for each set of scores collected. In boldface are the values obtained by Gallo-"Italic" participants on Gallo-"Italic" stimuli.

The strong internal *Abstand*-based unity of Gallo-"Italic" with respect to the bordering linguistic areas emerges even more clearly if we weight intelligibility mean scores per geographical distance between stimulus locality and participant locality, as shown in Table 4.72 below:

Chain A				Chain B					
Stimuli	Participants	Km	Mean	Weighted	Stimuli	Participants	Km	Mean	Weighted
S			score	score	e t			score	score
Occitan It	Occitan Fr	43	51.93 x 0.1616	8.39	Occitan It	Occitan Fr	67	85.71	24.54
Piedmon.	Occitan Fr	92	55.21 .3459	19.10	Piedmon.	Occitan Fr	102	49.71 .4359	21.67
Occitan Fr	Occitan It	50	66.36 .1880	12.48	Occitan Fr	Occitan It	67	73.21	20.96
Occitan It	Piedmon.	63	52.07 .2368	12.33	Occitan It	Piedmon.	53	88.99 .2265	20.16
Emilian	Piedmon.	266	85.43	85.43	Lombard	Piedmon.	234	85.12	85.12
Piedmon.	Emilian	266	78.00	78.00	Piedmon.	Lombard	234	70.24	70.24
Romagnol	Emilian	257	83.93 .9662	81.09	Emilian	Lombard	231	82.44 .9872	81.38
Emilian	Romagnol	260	83.36	81.48	Lombard	Emilian	231	83.93 .9872	82.85
Romagnol	Tuscan	57	36.64	7.85	Emilian	Tuscan	52	37.50	8.33

Table 4.72. Geographical distance between each stimulus locality and the corresponding participant locality, mean score and mean score weighted per geographical distance. In each chain, the highest mean score obtained in the chain was kept constant and the other scores were weighted. The small number written below each Mean score is its multiplicator: Mean score x multiplicator = Weighted score.

The unitary interpretation of the results from the two chains, provided by the intersection of the chains, allows in turn the strong *Abstand*-based unity of Gallo-"Italic" to surface even more clearly with respect to the bordering linguistic areas. Table 4.73 below displays the mutual intelligibility value for each pair of Gallo-"Italic" adjacent geolects in chains *A* and *B*. *Mutual* intelligibility is defined here as "the average (mean) of the intelligibility of speaker [x] for speaker [y] and vice versa (Cheng, 1997)" (Tang & van Heuven, 2009: 710).

Chain A	Mutual intelligibility	Chain B	Mutual intelligibility
Gallo-"Italic" geolects	mean	Gallo-"Italic" geolects	mean
Piedmontese – Emilian	81.715	Piedmontese – Lombard	77.68
Emilian – Romagnol	83.645	Lombard – Emilian	83.185

 Table 4.73. Mutual intelligibility value for each pair of Gallo-"Italic" adjacent geolects in chain A and in chain B.

Section 6.2.2 presents some considerations useful for future research about the strong internal linguistic unity of Gallo-"Italic".

4.4. DISCUSSION

The aim of the present empirical study was to test the post-Wartburg hypothesis (Section 3.2.8). I tested it because the 'critical convergence scenario' (which I expressed in the form of the testable post-Wartburg hypothesis) and the consequent synchronological pro-Italo- classification of present-day Gallo-"Italic" were stated in the literature without the support of quantitative evidence, and seem to be taken as a given in much recent literature. The post-Wartburg hypothesis can be summarised as follows:

The post-Wartburg hypothesis

A linguistic convergence occurred, which made the genealogically Gallo-Romance geolects historically spoken in the Po valley and Romagna (Gallo-"Italic") more similar to the bordering Italo-Romance geolects (south of the Massa-Senigallia line) than to the bordering uncontested Gallo-Romance geolects (Occitan). As a consequence, the (synchronological) continuum that Gallo-"Italic" today forms with the bordering Italo-Romance geolects is smoother than the one that they form with the bordering uncontested Gallo-Romance geolects. This in turn equates to saying that the line dividing Gallo-"Italic" from Occitan

on the Western Alps became a more substantial bundle of isoglosses than the Massa-Senigallia line.

On the basis of the link between the intelligibility level on the one hand and *Abstand* between geolects on the other, which historical linguistic studies traditionally assume, as well as more recent empirical research has demonstrated (Gooskens, 2006; 2007; Tang & van Heuven, 2009; see Section 4.1.1 for more details), I argued that the post-Wartburg hypothesis makes some testable predictions in terms of intelligibility rates (Sections 4.1.2.1 and 4.2.5.1). I therefore designed an experiment that would allow me to compare intelligibility between a series of geolects spoken in a chain of localities running from the Occitan-speaking Alps of France to the Tuscan-speaking Apennines. Based on such an experimental design, testing the post-Wartburg hypothesis predictions 4.1.2.3 and 1.8):

- 4a) In a chain of six localities, running from the French Alps to the Tuscan Apennines, passing through the Gallo-"Italic" area, which is the pair of localities between whose geolects intelligibility is the lowest?
- 4b) Which is the sequence of the three adjacent geolects along which intelligibility lowers most abruptly? In such a sequence of three geolects, how large is the decrease of intelligibility (i.e. the magnitude of difference) in comparison to the decrease possibly observed in other sequences of three adjacent geolects?

Answering question 4a would reveal whether the Gallo-"Italic" area, or possibly a part of it, forms a smoother continuum with Tuscan or with Occitan. Answering question 4b would reveal whether there is just a single continuum that is fairly homogeneously smooth between Tuscany and French Occitania or whether, on the contrary, one (or several) more substantial bundle(s) of isoglosses can be identified and, if so, where. As far as research question 4a is concerned, the post-Wartburg hypothesis predicts that the pair of localities between whose geolects intelligibility is the lowest are the ones situated on the two sides of the Occitan–Gallo-"Italic" border. Similarly, as far as research question 4b is concerned, the post-Wartburg hypothesis predicts that intelligibility lowers most abruptly across the Occitan–Gallo-"Italic" border.

Among the several methods that have been used to measure and compare levels of intelligibility between related language varieties, I chose the SPIN test (Kalikow et al., 1977; Tang and van Heuven, 2009) with high predictability sentences (see Sections 4.2.2.2 and 4.2.2.2.1). Among the various reasons for choosing this method, the fact that its results were demonstrated to better reflect

classifications obtained by comparativists and dialectologists than results obtained by other methods was crucial (Tang & van Heuven, 2009. See Section 4.2.2.2.1 for details). In order for my study to be as representative as possible of the intelligibility situation of the Gallo-"Italic" area as a whole, it involved testing two independent chains of six localities each, chain A and chain B, covering together a wider area than a single chain would have covered.

In Sections 4.3.A.6 and 4.3.B.6, I provided some interim discussion of the results, concluding that results from both chain A and chain B are incompatible with the post-Wartburg hypothesis, and that they actually provide direct evidence against it. Indeed, not only did no result stemming from all those tests provide evidence supporting the post-Wartburg hypothesis-which, one should remember, was, before my research, a hypothesis still in need of quantitative empirical evidence but on the contrary they all provided direct evidence that intelligibility is lower and decreases more abruptly across the Gallo-"Italic"-Tuscan border than across the Occitan-Gallo-"Italic" border, as well as than across any other line cutting the area of interest, from the Occitan-speaking French Alps to the Gallo-"Italic"-speaking Apennines. The link mentioned above, between intelligibility and Abstand, allows an Abstand interpretation of these findings. In particular, the correlation found in previous literature between the results of SPIN tests at the sentence level on the one hand and "lexical similarity" and "phonological correspondence" on the other (Tang & van Heuven 2009: 724) indicates that, contrary to what stated by von Wartburg (1967), Gallo-"Italic" did not become—at least in these two domains of the language⁸⁵—more similar to the bordering Tuscan geolects than to the bordering Occitan geolects. Instead, it remained more similar to the bordering Occitan geolects, still forming with them a continuum that is smoother than the one that they form with the bordering Tuscan geolects. Moreover, the results indicate that, from the specific point of view of "traditional dialectolog[y]", the stance of the pro-Gallo- "traditional dialectologists" (e.g. Hull 1982/2017, see Section 1.3) is the tenable one, despite whatever linguistic convergence Gallo-"Italic" could possibly undergo towards the Italian/Tuscan literary language during the past centuries (advocated by von Wartburg as a 'critical'—in the sense specified in Section 2.2.1— Italianizing factor for Gallo-"Italic"). This conclusion is based on previous literature, which found that the grouping "built on sentence-intelligibility scores [obtained by the SPIN test]... adequately...

⁸⁵ Given that I used the SPIN test, in the next sections, 'linguistic similarity' will be intended in this sense. See Section 6.2.1.6 (in Future directions).

reflect[s] the taxonomy of... dialects postulated by traditional dialectologists" (Tang & van Heuven, 2009: 726; see also McMahon & McMahon 2005: 26-29 about quantitative methods as means for "testing" the grouping proposed by traditional dialectology).

As a corollary to the current study conclusions, results also provided empirical evidence of the *strong* internal *Abstand* unity of Gallo-"Italic" with respect to *both* the bordering linguistic areas, not only the Tuscan one but also—albeit in a smaller measure—the Occitan one (see Tables 4.71 and 4.72 in Section 4.3.1; see Section 5.3, part II bullet points 3 and 4). The strong internal linguistic unity of Gallo-"Italic" with respect to the bordering linguistic areas emerged even more clearly after weighting intelligibility mean scores per geographical distance between stimulus locality and participant locality (see Section 4.3.1, Table 4.72).

In the interim discussions of chain *A* and chain *B* results, which I proposed separately in Sections 4.3.*A*.6 and 4.3.*B*.6 respectively, I showed that, notwithstanding some differences between the two chains concerning the scores on the Alpine segments, which have no critical importance for the present aims and whose possible historical-dialectological explanations are beyond the scope of the current research, results from each chain answer the research questions in a substantially equal way. This can be seen re-summarized in Tables 4.71 and 4.72 above (in Section 4.3.1).

A HIGHER LEVEL OF GEOGRAPHICAL GENERALIZATION. In the interim discussions of chain A and chain B results (Sections 4.3.A.6 and 4.3.B.6) that I have re-summarized in the lines above, I merely presented the differences between the intelligibility scores obtained by the *participants* on *stimuli* in terms of differences in *Abstand* between *participants' geolect* and *target geolect(s)*. I would call this a 'first level of generalization', namely the one allowed by the statistical tests themselves. In this respect, the results of the statistical analyses are sufficient to falsify the post-Wartburg hypothesis, since they show that *at least* along the stripe of territory defined by each chain of the data points, the intelligibility data collected are incompatible with the post-Wartburg hypothesis.

However, I believe that the current study is more resolutive than that, as a higher level of geographical generalization of the results can be suggested, as based on some dialectological considerations that are independent and overabundant with respect to the considerations proposed at the first level of generalization (i.e. the statistical analyses). Such dialectological considerations prevent the results of the statistical analyses from a potential pro-Italo- interpretation. Specifically, pro-Italo scholars could propose a counter-conjecture suggesting that the results of the statistical

analyses do not exclude that *part of* Gallo-"Italic" forms a smoother continuum with Tuscan than with Occitan. I report this potential counter-conjecture in (*a*) below:

a. each chain (*A* and/or *B*) could be a sort of *special and thin conservative corridor* which is not representative of the current *Abstand* nature of some/most of the Po valley and Romagna.

However, counter-conjecture (a) does not stand up to scrutiny as it is irreconcilable with the scholarly literature in dialectology. As we have seen in Section 4.2.1, scholarly dialect studies ascribe the geolect spoken in each data point investigated to a smooth dialect continuum (defined as a *language of Italy*⁸⁶ in the UNESCO Atlas of the World's Languages in Danger and in several more recent scholarly studies⁸⁷), clustering broadly around a regional core. None of the geolects investigated can be considered a 'linguistic island', rather they can be considered as fully representative of one of the major regional continua (or regional languages) that the literature acknowledges for Italy, hence even more of the *sub-group* of that regional language which they are more precisely ascribed to. This suggests that the trends identified in the studies presented here are highly likely to be found between other possible data points, situated in analogous reciprocal positions, not far from the ones investigated in this thesis. Taking an example from chain B, given the scholarly ascription of Piedmontese-9 geolect to the *Alto Piemontese* sub-group of Piedmontese (see Allasino et al. 2007, Figure 2.1), and of Occitan-8 geolect to the southern Cisalpine sub-group of Occitan (see Section 4.2.1.4), it is highly likely that intelligibility scores similar to the ones reciprocally obtained between Occitan-7, Occitan-8, and Piedmontese-9 data points would be obtained between Occitan-7 and other possible southern Cisalpine Occitan and Alto Piemontese data points situated in analogous reciprocal positions. Identical considerations can be made regarding to the chain A data points situated in the analogous reciprocal position, and in all the other positions in the chains. These dialectologically driven considerations broaden the geographical representativeness of the results from each chain.

INTERSECTING THE CHAINS. A higher level of generalization is also provided by the experimental design. As presented in Section 4.2.1.3, I designed the two chains so that they intersect in two points (see Figure 4.2 above). I argued that, thanks to this aspect of the design, a possible

⁸⁶ Henceforth also 'regional languages' or 'UNESCO languages'.

⁸⁷ See some examples in Tamburelli & Tosco 2021.

parallelism between the two chains in terms of the sequence of intelligibility scores, combined with possible high levels of intelligibility between—at least—the Gallo-"Italic" pairs of adjacent data points in each chain, could not be interpreted as a fortuitous resemblance between two distinct and unintelligible (or lowly intelligible) parallel continua, but rather as a general trend shown by data point chains that are necessarily representative of the same smooth continuum (i.e. Gallo-"Italic"). It turns out that, in both chains, similarly high intelligibility scores were found between pairs of adjacent Gallo-"Italic" data points, and similarly low scores were found across the Apennines (see Table 4.71 above). This means that intersecting the chains actually made the study of each chain more informative than what the study of each of two non-intersecting chains would have been, allowing a unitary interpretation of the data collected for the two chains. Based on these considerations and on the dialectological arguments presented above, I consider it reasonable to generalize the linguistic conclusions drawn about the geolects investigated to the entire linguistic regions (i.e. regional languages) of which those geolects are local expressions, or at least to a large number of surrounding geolects.

As a corollary to the current study conclusions, the unitary interpretation of the results from the two chains provided by the intersection of the chains allowed in turn the *Abstand* unity of Gallo-"Italic" to surface more clearly with respect to the bordering linguistic areas (see Tables 4.71 and 4.72 in Section 4.3.1, see Section 5.3, Part II bullet points 3 and 4).

A FURTHER LEVEL OF GENERALIZATION: FROM 'OCCITAN' TO 'GALLO-ROMANCE'. Up to now, the results of the statistical tests and their wider geographical interpretation provided by dialectological information and by some aspects of the experimental design indicated that Gallo-"Italic" geolects remained linguistically united and that they did not become similar to the bordering Tuscan geolects more than they are similar to the bordering Occitan geolects. On the contrary, results indicated that the continuum that Gallo-"Italic" geolects currently form with Occitan geolects is smoother than the continuum that they form with Tuscan geolects. In order to be as scrupulous as possible, it should be pointed out that what these results strictly indicate is that Gallo-"Italic" groups with Occitan and not with Tuscan, but this does not allow us to draw any conclusion about the position of Gallo-"Italic" with respect to the wider sub-groups of the Western Romance domain. However, the pro-Gallo- interpretation of the results, and more precisely the idea that *the literature that I analysed* in the current study would be more consistently expected to classify Gallo-"Italic" as Gallo-Romance, derives necessarily from the following three facts: (1.) in the literature that I

currently analysed. Occitan is ascribed to Western Romance and in particular to Gallo-Romance; (2.) in von Wartburg (1967) and in the rest of the literature that I currently analysed (see Chapter 2: Lausberg 1965; Hall, 1974 and 1976; Pellegrini, 1975, 1992; Posner, 1996; Loporcaro, 2009), tertium non datur⁸⁸ from the genealogical and synchronological points of view, not only between Eastern and Western Romance, but also more specifically between Italo-Romance and Gallo-Romance, and (3.) Gallo-"Italic" is described as sharing all the inherited traits that are considered relevant in defining Western Romance and specifically Gallo-Romance (see Chapters 2 and 3 for some examples). Indeed, I recall that, according to von Wartburg, after that Gallo-"Italic" geolects of the Po plain started the purported linguistic convergence that would have purportedly led them to becoming more similar to Tuscan than to Occitan, "...almost all the upper valleys of the rivers that go down the Western Alps towards the Po valley have maintained their Gallo-Romance nature ... [and, w]hat happened on the western edge of the Po plain also happened on its northern edge"⁸⁹ (von Wartburg, 1967: 130-131 [emphasis added]). As far as the results of the current study show that Gallo-"Italic" remained more similar to Occitan, and as far as Occitan is Western Romance and Gallo-Romance, as the literature unanimously indicates, these results necessarily indicate, following von Wartburg's premises, that present-day Gallo-"Italic" "maintained its Gallo-Romance nature" in a sufficient quantity to make it unjustifiable, even from a mere synchronological standpoint, to separate it from the rest of the Gallo-Romance taxon and group it with Italian/Italo-Romance.

CONVERGENCE OF TUSCAN TOWARDS CISALPINE. Further considerations strengthen the pro-Gallo*quantitative* relevance of the results from the current study. Indeed, it should be recalled that, in von Wartburg (1967), what is decisive in making Gallo-"Italic" groupable with Tuscan in the "Italian" group are "waves of linguistic changes *progress[ing] from South to North*… from the 13th century, when the linguistic supremacy of Tuscan became unopposed" (Wartburg, 1967: 130 [emphasis added]). This means that in von Wartburg's view, Gallo-"Italic" would have *converged*

⁸⁸ '*Tertium non datur*' in Latin means 'a third option is not possible'. This equates to saying that these scholars do not theorize the existence of a linguistic group that is geographically situated between Gallo-Romance and Italo-Romance across the Western Alpine regions and that is taxonomically situated at the same categorial level of these latter groups or at the same categorial level of Western and Eastern Romance (i.e. that is in complementary distribution with them). I will use the expression '*tertium non datur*' in subsequent instances, too, in order to concisely refer to this concept.

⁸⁹ "...les hautes vallées des cours d'eau qui descendent des Alpes occidentales dans la plaine du Pô ont presque toutes gardé leur caractère galloroman... Ce qui s'est produit sur la lisière occidentale de la plaine du Pô s'est également produit sur sa lisière septentrionale."

towards Peninsular geolects and this very fact would have entailed its divergence from Occitan and the rest of Gallo-Romance, making it finally more similar to the former than to the latter, and this is precisely the hypothesis which I sought to empirically test by means of the intelligibility test. Importantly, when interpreting the results of the current study in the view of testing such a hypothesis, one should consider that, as scholars agree, at least from the Early Middle Ages, Tuscan accepted many Gallo-Romance loans from Cisalpine, especially-but not exclusively-as far as the Apennine Tuscan geolects are concerned (like the ones involved in the current study), making them converge towards Gallo-Romance and diverge from a more original form of Italo-Romance Tuscan (see among others Rohlfs 1949-1966, Hull 1982/2017; see Section 3.2.6). This means that the intelligibility scores obtained in the current research by Tuscan participants (of our days) on Gallo-"Italic" stimuli can be assumed to be higher than the ones that would be optimally informative for the current aims, namely the ones obtained by hypothetical 'non-Cisalpinised' Tuscan speakers. The differences in terms of score means and magnitude of difference actually observed in the current study between Alpine and Apennine borders should therefore be regarded as underestimated with respect to the ones correctly representative of the degree of *convergence of* Gallo-"Italic" towards Italo-Romance, which is the precise object of the current research. These considerations strengthen the pro-Gallo- interpretation of the results, which in any case are, as I showed above, sufficient in their own right to falsify the post-Wartburg hypothesis.

SHARING ITALIAN AS AN OFFICIAL LANGUAGE. All the participants of the politically Italian side of both chain studies share Italian as the language of literacy and media. It could be argued that this could facilitate the intelligibility task, suggesting to the participant the meaning of a word or of a grammatical trait which is shared by the target geolect and Italian but not by the participant's geolect (see 'language competence' as control variable in Sections 4.1.4 and 4.2.2.1). This would consequently make it impossible to 'measure' objectively the effect that the mere *Abstand* between the participant's and stimulus' geolects has on intelligibility. However, this should not be regarded as an issue for the current aims. Indeed, the current research questions, rather than seeking to 'measure' intelligibility levels between geolects in absolute terms, sought to 'compare' them in order to see where they are the largest. In this respect, two more particular considerations grant the informativeness of the results for the current aims, and in particular strengthen their pro-Gallo-interpretation. On the one hand, as far as the politically Italian side of the study is concerned, the fact that all the geolects investigated share Italian as a standard language should allow us to

consider 'standard Italian competence' as an essentially controlled variable, and its effects as broadly minimised. Indeed, it can be reasonably assumed that sharing standard Italian as the language of literacy and media is likely to have facilitated to some extent participants of all groups, including Tuscan participants in understanding Romagnol stimuli. In fact, the Italian (or 'Italians') of literacy and media shares with Gallo-"Italic" a good deal of lexicon and structures that are not shared with various local Tuscan geolects (see for instance Berruto et al. 1993/2002). For instance, the common word for 'broom' in Gallo-"Italic" geolects is co-etymologic with the common form in the Italian of literature and media ['skopa], while in the Tuscan geolects currently investigated it was [gra'nata]. This consideration in its own right advocates the informativeness of the results for the current aims. On the other hand, however, a finer-grained analysis could partially question the consideration just presented, arguing that the variable 'standard Italian competence' is likely to have had a bigger effect on score when the stimulus geolect was more similar to Italian. This would mean that the 'standard Italian competence' variable could not be optimally controlled in the current study by the mere fact that all the participants of the Italian side of the study shared Italian as a standard language. For instance, similarity indexes obtained by dialectometric studies show that standard Italian is slightly more similar to Milanese (Lombard) than to the Vila Falet geolect (Piedmontese) (Goebl, Dialektkarten.ch 2019). This could at least partially explain the asymmetry in intelligibility between Piedmontese-9 and Lombard-10 geolects in chain B study (see Table 4.71). My point here is that there are reasons to maintain that not even such a possible inequality of the 'standard Italian competence' variable in affecting the various group scores can jeopardize the effectiveness of the results in falsifying the post-Wartburg hypothesis; on the contrary, they even strengthen their pro-Gallo- interpretation. Indeed, similarity indexes obtained by dialectometric analyses show that standard Italian is more similar to Emilian and Romagnol than to Piedmontese and the Occitan of Italy (Goebl, Dialektkarten.ch 2019). Therefore, we can assume that, if 'standard Italian competence' had an effect on the score, such an effect is likely to have been greater on Tuscan participants' scores (obtained on Emilian and Romagnol stimuli, i.e. across the Apennines) than on Piedmontese and Occitan participants' scores (obtained on each other's stimuli, i.e. across the Alps). These considerations grant the informativeness of the results for the current aims and in particular strengthen their pro-Gallo- interpretation.

A further consideration strengthens the pro-Gallo- interpretation of the results: the fact that Occitan-speaking participants from France do not share Italian as their standard language with the

other groups in the chain (including the Tuscan groups) suggests that, if it was possible to fully control 'standard Italian competence' as a variable, the differences in scores and magnitude of difference between the Alpine range and the Apennine range would have been greater than the ones that actually resulted.

MEASURING VS. COMPARING INTELLIGIBILITY RATES. Gooskens (2013) points out that in studies where different methods were used for measuring intelligibility between the same pair of varieties (true/false questions, multiple choice questions, word translation, etc.), the percentage of correct answers varied considerably in some cases according to the method used. For the moment, this would make it impossible to state a unique summarizing value/percentage for the overall intelligibility between two given geolects. However, two other considerations in Gooskens (2013) suggest that this fact does not represent a problem for the current aims. Firstly, if, on the one hand, it is impossible to state a unique summarizing value/percentage as far as one wants to measure intelligibility of various" geolects (Gooskens, 2013: 13 [emphasis added]). Secondly, as to the question "which method is best?", Gooskens (2013) answers that "the choice of method… depends on the precise aim of the investigation… [as] different tests measure different aspects of intelligibility" (Gooskens, 2013: 10-11).

These considerations suggest that the current study results can be considered sufficiently effective in falsifying the post-Wartburg hypothesis. Firstly, we have seen that the current research questions did not seek an absolute value/percentage of intelligibility between geolects, rather they sought to *compare* scores and magnitudes of difference in order to reveal where they are greatest. In this sense, the results of the statistical tests were sufficient to answer these questions. Furthermore, we have seen that the method that I have used (SPIN test with high predictability sentences) was found to produce results that correlate with results from traditional comparativists/dialectologists better than other kinds of intelligibility testing (Tang & van Heuven, 2009; see Section 4.2.2.2.1). Given the classificatory aims of the current research, and more specifically, given that the current problem statement concerns a disagreement appearing in the traditional comparative and dialectological literature, this fact made the SPIN test results more informative than the ones obtainable by other methods currently at the disposal of researchers.

LACK OF GALLO- "ITALIC" PARTICIPANTS' SCORES ON TUSCAN STIMULI. In Section 4.2.1, we have seen that Romagnol (in chain *A*) and Emilian (in chain *B*) participants' intelligibility scores on Tuscan

stimuli were not collected. Indeed, Gallo-"Italic" speakers of our days are all literate in the Italian language, which is based on Tuscan and is very similar to it, therefore those scores would not have been informative for the current aims. This could be seen as a formal limitation of the empirical study design, since we cannot exclude that intelligibility scores obtained by some hypothetical monolingual (namely non-speaking Tuscan) Emilian/Romagnol participants on Tuscan stimuli could turn out to be higher than the ones actually obtained in the reverse direction. However, some considerations suggest that the intelligibility data actually collected are sufficient to falsify the post-Wartburg hypothesis. Indeed, we have seen that in "most (all?) cases" (Hammarström, 2008: 35) presented in the literature, the asymmetry in intelligibility scores observed is best explained as a consequence of non-reciprocal acquired knowledge (or asymmetric learning) (see Section 4.1.5; see also Tamburelli 2021a). This suggests that the most prudent and resolutive way—as most disadvantageous for the pro-Gallo- interpretation-of assessing whether the lack of Gallo-"Italic" participants' scores on Tuscan stimuli could even only hypothetically be regarded as a limitation for the present study design would be to assume the lowest value of the two possibly asymmetric values (collected in the Gallo-"Italic" and Occitan areas) as the one that is legitimately more representative of the mutual intelligibility-namely of the mere linguistic distance between the geolects compared—such as it would be observed in conditions of a total lack of previous exposure to the target geolect(s). It turns out that in each of the two current studies (chain A and chain B), all the scores (in both directions) obtained across the Occitan-Piedmontese border and across the Alpine ridge (as well as between all the other pairs of geolects investigated in the Po valley and Romagna) were significantly higher than the scores obtained from Tuscan participants on Emilian and on Romagnol stimuli. Analogously, all the respective magnitudes of difference were higher across the Apennine ridge than on the western Alpine front. This very fact prevents the lack of Gallo-"Italic" scores on Tuscan stimuli from being a problem for the current purposes. Their lack could have been regarded as partially (but not crucially) reducing the pro-Gallo- interpretation of the results only if Tuscan participants' scores on Emilian or Romagnol stimuli resulted higher than at least some of the scores collected across the Occitan–Piedmontese border. Indeed, in this case, one could hold that a (actually not measurable) score of hypothetical monolingual Emilian/Romagnol participants on Tuscan stimuli, which would be lower than those specific low scores obtained on the Alpine front, would also be necessary in order to falsify the post-Wartburg hypothesis in those specific parts of the chains. Indeed, in this case, we could not exclude that, in

those parts of the chain, the 'intelligibility overtaking' did take place. This not being the case, however, the only scores actually collected across the Apennines (namely the ones of Tuscan participants on Gallo-"Italic" stimuli) are not only sufficient for falsifying the post-Wartburg hypothesis (for which it was sufficient to show that at least in *some* of the Alpine localities investigated the 'intelligibility overtaking' did not take place), but they even show that such 'overtaking' did not take place in *any* parts of the chains.

Apart from these considerations, it is in any case worth recalling that, formally, the aims of the current empirical study were to test the post-Wartburg hypothesis, considered as the hypothesis 'with the burden of proof', namely one still in need of being supported by possible empirical evidence. Therefore, if for whatever other possible reasons the lack of Emilian/Romagnol participants' scores on Tuscan stimuli was regarded as a weak point of the current experimental design, this should be properly regarded as jeopardising the possibility of providing evidence *in favour of* von Wartburg's pro-Italo- stance, leaving the pro-Gallo- stance still in the strongest position, as supported by von Wartburg's genealogical descriptions themselves. Indeed, as pointed out above, it can be deducted that in von Wartburg's line of reasoning, before "the waves of linguistic changes progress[ing] *from South to North* [had] taken away some pieces of *that old frontier* [Massa-Senigallia line] and [had] carried them towards some more northern areas" (Wartburg, 1967: 130 [emphasis added]), linguistic similarity—hence intelligibility—was lower across "that old frontier", namely across the Massa-Senigallia line, than across any other line cutting the territory currently investigated, including the Occitan–Gallo-"Italic" border and the western Alpine ridge.

RELEVANCE OF CHAPTER TWO (CRITICISM TO THE 'MIXED CRITERION' TRADITION) TO THE CURRENT EMPIRICAL STUDY. It is now important to recall the conclusions of Chapter 2 of the current study, and show how, on their basis, the effectiveness of the current empirical study results in supporting the pro-Gallo- stance becomes more evident. On the one hand, some scholars (see McMahon & McMahon 2005; van Heuven & Tang 2009) consider the methods used and mentioned in Chapters 3 and 4⁹⁰ (SPIN test used in the current experiment; Levenshtein algorithm used in Tamburelli & Brasca 2018, see Sections 1.3 and 2.1.2.1.2; Salzburg dialectometry in Goebl 2008, see Section 3.3.4) as endowed with heuristic effectiveness in settling classificatory disagreements, on the basis

⁹⁰ These are the chapters devoted to the analysis and testing respectively of the post-Wartburg hypothesis.

of the fact that their results mirror the results of comparativists in parts of the family tree where comparativists generally agree, and mirror the dialect groupings commonly indicated in traditional dialect studies. This would indicate that the comparative method and the traditional dialectology are authoritative points of reference for the interpretation of the results of these heuristic methods and for their effectiveness itself (see McMahon & McMahon 2005). On the other hand, in Chapter 1, we have seen that the number of pro-Italo- scholarly studies (where Gallo-"Italic" is explicitly classified or simply defined or implicitly presumed to be Italo-Romance and not Gallo-Romance) seems to far exceed the number of pro-Gallo- studies. This might suggest that the pro-Italoclassification is the 'strongest' proposal, namely the one in favour of which more scholars think that there is *more* evidence. One would therefore be entitled to assume that the pro-Italo- scholars would have provided more Abstand-based evidence, since most pro-Italo- studies (and in particular all the ones that I have analysed in the present study, i.e. Lausberg, 1965; Hall, 1974 and 1976; Pellegrini, 1975, 1992; Posner, 1996; Loporcaro, 2009; see Chapters 1 and 2) appear to ground their proposals of classification for (almost the totality of) Romance geolects on Abstand arguments. This being the case, one could doubt the effectiveness of a heuristic method, such as the SPIN test—whose result effectiveness is assessed on the basis of its mirroring the results of traditional comparative and dialect studies-in challenging in an equally authoritative position the opinion (pro-Italo- stance) of (what seems to be) the majority of comparativists and dialectologists themselves.

At this point, Chapter 2's conclusions help in dispelling this doubt, showing that the scholars who hold their pro-Italo- stance on *Abstand*-based arguments are far from being many. Firstly, in Chapter 2, I have shown that, indeed, scholars unanimously and regularly describe Gallo-"Italic" (and refer to it explicitly or implicitly) as being genealogically Gallo-Romance, *including pro-Italo- scholars*. Secondly, in the same chapter, I have also shown that in most pro-Italo- studies, namely in the 'mixed criterion' tradition, the ascription of Gallo-"Italic" to Italo-Romance is not based on *Abstand* arguments, and can consequently be rejected without the need of providing any new *Abstand* evidence; rather, it can and should be rejected on the basis of mere epistemological considerations. Therefore, Chapter 2 demonstrated that the number of (classical) comparative and dialect studies where the pro-Italo- stance is formally grounded on *Abstand* arguments—and for this reason can consistently oppose the current equally *Abstand*-based empirical study—is tiny. Basically, these are von Wartburg (1967), a pro-Italo- study where *Abstand* and *Ausbau* criteria

appear to not be mixed, and various single statements made by some 'mixed criterion' scholars who generically refer to a (not measured) linguistic convergence on Italian due to heteronomy as an additional reason for classifying/labelling Gallo-"Italic" as Italo-Romance or "Italian" (e.g. Loporcaro 2009, Lausberg 1965). This means that even in von Wartburg (1967) and those other studies, the Gallo-Romance genealogical profile of Gallo-"Italic" does not seem to be contested, rather only its current synchronological profile. To add to the difficulties for the pro-Italo- stance, in Chapter 3, I finally showed that, even in this last, extremely reduced (synchronological) bastion in defence of the pro-Italo- stance, the arguments are not effective: indeed von Wartburg makes a statement that is quantitative in nature but he does not provide *quantitative* evidence (i.e. by actual measurements) that Gallo-"Italic" has become *more* similar to Tuscan than to Occitan. This means that, also from the mere synchronological standpoint, the heuristic method (SPIN) used in the current study cannot be said to oppose 'a large number' of authoritative pro-Italo- *Abstand*-based studies, for the simple reason that no pro-Italo- quantitative evidence at all was ever provided by comparativists and dialectologists, including von Wartburg.

In summary, the results of the current empirical study seem to be opposed by no scholarly *Abstand*based arguments, as far as their *genealogical* interpretation is concerned. Indeed, they are in line with what all 'classical' pro-Italo- comparativists explicitly or implicitly (i.e. by their descriptions) indicated about the Western Romance and Gallo-Romance genealogical nature of Gallo-"Italic", including the 'mixed criterion' scholars,⁹¹ whose pro-Italo- stance was rejected on the basis of epistemological arguments in Chapter 2. Furthermore, the *synchronological* pro-Gallointerpretation of the results also seems to be challenged by no scholarly *Abstand*-based arguments. Indeed, no quantitative evidence was provided by any pro-Italo- scholars, von Wartburg included. Some other considerations can probably further support the effectiveness of the SPIN method (and the dialectometric methods) in supporting the ongoing maintenance of the Gallo-Romance (and in any case non-Italo-Romance) identity of Gallo-"Italic". Indeed, the 'ancillary' status of these methods with respect to the traditional dialectological and comparative methods (McMahon & McMahon 2005), which I made reference to in the lines above, could be possibly held especially as far as the genealogical interpretation of their results is concerned (see McMahon & McMahon 2005), for which the fine-grained linguist's knowledge of the languages compared can be

⁹¹ But possibly not Robert A. Hall Jr.: see his Family Tree in Section 2.1.1.2.4, Figure 2.1.

considered irreplaceable in assessing, for instance, the relative chronology of changes. Instead, these methods can no longer be reductively said to be 'ancillary' with respect to the traditional methods as far as the synchronological interpretation of their results is concerned, where all possible traits should be considered, regardless of whether they are inherited or borrowed. Indeed, the effectiveness of the SPIN test in assessing the *Abstand* between geolects is based on the fact that its results mirror the ones of dialectometric methods/analyses (see Section 4.1.1). These latter methods in turn, compared to the traditional dialectological methods (see McMahon & McMahon 2005), have the considerable advantage of avoiding the 'arbitrary trait selection' problem (see Section 3.3.3; see Tamburelli & Brasca 2018).

CONTROL VARIABLES. As far as the control variables are concerned (see Sections 4.3.*A*.4.6 and 4.3.*B*.4.6), it should be noted that in other experimental settings, the correlation between attitudes and intelligibility scores was weak (Gooskens, 2006, 2007b; van Bezooijen & Gooskens, 2007; Schüppert & Gooskens, 2011; Tamburelli, 2014) or non-significant (Leonardi, 2016). It turns out that in both chain *A* and chain *B*, the present results also indicate that attitude did not influence intelligibility (see Sections 4.3.*A*.4.6.5 and 4.3.*B*.4.6.5). This casts further doubt on the claim that attitudes significantly affect intelligibility scores (see Sections 4.1.4 and 4.2.2.1).

4.4.1. CONCLUSION OF THE EMPIRICAL STUDY

The discussion of the chain *A* and chain *B* empirical studies results can be therefore summarised as follows: the results of all the measurements, statistical tests, and comparisons conducted in both chain *A* and chain *B* studies did not provide any evidence that the intelligibility score is higher and decreases less abruptly across the Apennines than across the Occitan–Gallo-"Italic" border, nor across the western Alpine ridge. On the contrary, they provided evidence that the intelligibility score is lower and decreases more abruptly across the Apennines than across any line cutting the rest of the territory investigated, from the Occitan Alps in France to the Romagnol Apennines. This is incompatible with the post-Wartburg hypothesis and is direct evidence against it. In linguistic terms, the results indicated that there is no evidence that the centuries-long contact with the Tuscan/Italian literary language made Gallo-"Italic" geolects became more similar to the bordering Italo-Romance sister language (i.e. Occitan). On the contrary, the results indicated that Gallo-"Italic" is still more similar to the bordering uncontested Gallo-Romance geolects than to the bordering Italo-

Romance geolects. Moreover, the implicit stand in the post-Wartburg hypothesis, namely that Gallo-"Italic" remained linguistically united during the centuries, was borne out. However, intelligibility test results and magnitude of difference of intelligibility scores across the Occitan -Gallo-"Italic" border and across the Apennines, indicated a grouping which is opposite to the one proposed by von Wartburg. Indeed, rather than indicating that Gallo-"Italic" became linguistically united with Tuscany-moving as a whole far from Occitania-the results indicated that Gallo-"Italic" remained as a whole linguistically united with Occitania. Besides these conclusions, which are based on the intelligibility data actually collected, and are sufficient to falsify the post-Wartburg hypothesis, other considerations broaden the geographical representativeness of the intelligibility data themselves. Indeed, scholarly studies describing each of the geolects investigated as a member of a smooth dialect continuum clustering around a regional core, and a particular aspect of the experimental design (i.e. the intersection of the two data point chains), suggest that results similar to the ones obtained with the data points investigated are likely to be obtained with other possible data points situated in analogous reciprocal positions, not far from the ones investigated. This allows one to generalize the results across a wider area than the stripes of territory linking the single localities investigated. Assuming then, on the basis of the scholarly literature, that the Occitan geolects currently investigated are genealogically Gallo-Romance as well as still synchronologically grouped with the other Gallo-Romance geolects, and that from both a genealogical and a synchronological standpoint, between Italo-Romance and Gallo-Romance tertium non datur,⁹² the results of the current empirical research support the classification of Gallo-"Italic" as Gallo-Romance and not as Italo-Romance. The historical convergence of Tuscan (and the other Peninsular) geolects upon Cisalpine, acknowledged by scholars as starting at least from the Early Middle Ages, strengthens the pro-Gallo- interpretation of the results, suggesting that the intelligibility scores across the Apennines would likely be even lower than the ones actually collected if Tuscan did not converge on Cisalpine in the past centuries, maintaining a more original Italo-Romance Abstand profile. Therefore, even assuming that in von Wartburg (1967) the label "Italian" attributed to the set of Peninsular plus Cisalpine geolects is meant as a member of a synchronological classification and not a genealogical one, the results indicate that classifying/labelling Gallo-"Italic" as "Italian" has to be rejected.

⁹² For the meaning of *tertium don datur* in this context, see Section 4.4 above, footnote 88.

In a more general conclusion to the entire current research, in the following fifth chapter I will show how the results of the current empirical study integrate and harmonize with the conclusions of the analyses conducted in the previous chapters of this thesis and with the results of other studies presented above (Chapters 1 and 2; Salzburg dialectometric studies, see Section 3.3.4; Tamburelli & Brasca 2018).

CHAPTER FIVE

CONCLUSION

5.1. MAIN FINDINGS

In this thesis I contributed towards settling an apparent 'disagreement' among scholars concerning the classification of Gallo-"Italic". Some scholars classify Gallo-"Italic" as Gallo-Romance ('pro-Gallo-' scholars) while others classify it as Italo-Romance ('pro-Italo-' scholars). These two labels ('Gallo-Romance' and 'Italo-Romance') are irreconcilable, as they are normally used in the family tree model to name two cousin taxa: Gallo-Romance is a Western Romance daughter, while Italo-Romance is an Eastern Romance daughter. In the current thesis, I argued that classifying Gallo-"Italic" as Italo-Romance has to be rejected for several different reasons. In this respect, this thesis can be conceptually divided into two parts. In part I (Chapters 1 to 3) I showed that classifying Gallo-"Italic" as Italo-Romance should be rejected on the basis of epistemological (and ultimately logical) arguments, with no need for making recourse to new linguistic (dialectological or philological) evidence. In part II (Chapter 4), by means of a series of empirical tests, I provided new linguistic evidence that present-day Gallo-"Italic" is still linguistically more similar to the uncontested Gallo-Romance than to the Peninsular geolects, hence it is still properly grouped with the former and not with the latter, also from the synchronological standpoint. In the following paragraphs, I will re-summarize these different arguments separately for the two conceptually distinct parts.

5.1.1. PART I: EPISTEMOLOGICAL ARGUMENTS REJECTING THE CLASSIFICATION OF GALLO-"ITALIC" AS ITALO-ROMANCE

In part I (Chapters 1 to 3), I showed that the 'disagreement' at issue (pro-Gallo- vs. pro-Italostance) cannot be regarded as a simple disagreement concerning the relative chronology of changes (which is the criterion by which the genealogical grouping is identified) or concerning the linguistic similarity of geolects (which is the criterion by which the synchronological grouping is identified), as with the several cases of classificatory disagreement that the literature offers and that can be solved by linguistic arguments. On the contrary, I showed that in most pro-Italo- studies, some *formal* inconsistencies appear that make the pro-Italo- stance *formally* unsustainable. I showed that these inconsistencies (that I named 'problems') concern both the operations that constitute a classification, namely *grouping* (how the items classified should be grouped based on a given classificatory criterion) and *labelling* (how the identified groups should be labelled in an informative and unambiguous way).

5.1.1.1. PROBLEMS CONCERNING GROUPING

I rejected some scholars' stance according to which, in an *Abstand*-based classification of Romance geolects, Gallo-"Italic" and the rest of Cisalpine would be *grouped with* Peninsular geolects in a taxon in which no other Romance geolects would be included.¹ Indeed, I showed that the scholarly "classifications" that propose such a grouping suffer from the formal inconsistencies that I have named as follows:

- the 'ontological problem', showing up in two forms, namely the 'category problem' and the 'taxon problem';
- 2. the 'ad hoc problem';
- 3. the 'lack of quantitative evidence problem'.

The ONTOLOGICAL PROBLEM (see Section 2.1.1) appears in what I have called 'the mixed-criterion studies', which probably represent the vast majority of the pro-Italo- literature. These studies show the following characteristics: (*a.*) they describe and compare the vast majority of the varieties that they consider in terms of *sharing vs. non-sharing of isoglosses* (i.e. in terms of *Abstand*), and on this ground they group them; (*b.*) they describe Gallo-"Italic" as sharing all the isoglosses that in their same studies are considered relevant in distinguishing Western Romance, and in particular Gallo-Romance, from Italo-Romance; (*c.*) some sociological (*Ausbau*) or geopolitical arguments are eventually presented in these studies which determine the grouping of Gallo-"Italic" with Peninsular geolects instead of with the expected uncontested Gallo-Romance geolects. However, I have shown that *Abstand* and *Ausbau* correspond to two independent analysis perspectives (i.e. two

¹ In other words, I rejected the classification of Cisalpine and Peninsular geolects as exclusive members of a genealogically- or synchronologically-identified linguistic taxon.

unrelated dimensions), and establish two independent classifications or, if at all, a bidimensional one. Therefore, by mixing these two independent classificatory criteria within a formally unidimensional "classification", I argued that these scholars propose a "classification" which is not informative from the Abstand nor from the Ausbau point of view. Being as such uninformative, such a "classification" is not useful for scientific purposes and has to be rejected. Indeed, I have shown how in scientific research, classification is an informative tool. I have also pointed out that the 'ontological problem' appears in two forms, which I named the 'category problem' and the 'taxon problem'. The CATEGORY PROBLEM specifically appears when, within a formally unidimensional "classification of languages", both the concepts of 'Abstand language' and 'Ausbau language' are understood. In such a "classification" the categorial status of 'taxonlanguage' is attributed to a set of geolects because this set is recognised as forming an Abstand language, while the same categorial status of 'taxon-language' is attributed to another set of geolects because this latter set is recognised as forming an Ausbau language. Said more concisely, the category problem appears because the Abstand and the Ausbau meanings of the category name 'language' are both understood and not distinguished in compiling a formally unidimensional "classification of languages". I showed that this fact annuls the informativeness of the category name *language* itself, of the category name *dialect*, and the transparency of entire statements and passages, as much as the informativeness of the entire "classification". I concluded that, for this reason, the entire proposed "classification" has to be rejected. The TAXON PROBLEM can be observed when, in a unidimensional and professedly (but as a matter of fact only predominantly) Abstand-based "classification" of Romance geolects, Peninsular geolects are ascribed to the Abstand-identified taxon K (since we are focusing on grouping, it is not relevant how this taxon is labelled) according to the Abstand criterion, while Gallo-"Italic" geolects are ascribed to the taxon K according to the Ausbau criterion. I showed that, due to this practice of mixing criteria, stating that 'geolect Xese is part of the taxon K' cannot inform about Xese from the Abstand nor from the Ausbau standpoint. This can consequently be said for all the other geolects and the relative taxa to which they are ascribed, hence the "classification" as a whole is arguably not a classification at all and has to be rejected.

What I called the AD HOC PROBLEM is conceptually distinct from the taxon problem, even though, when the ad hoc problem appears, the two are concomitant. It surfaces when the *Abstand* or the *Ausbau* criterion (whose simultaneous intervention entails the taxon problem per se) is applied only

to some geolects and not to others that present the same conditions of applicability of the criterion itself. As an example, I showed how in a pro-Italo- contribution, a certain *Abstand*-based argument is considered crucial for ascribing Corsican to Italo-Romance but, surprisingly, not for ascribing Gallo-"Italic" to Gallo-Romance. That "classification" is not informative: after reading their linguistic description, one who is not previously informed about that ad hoc treatment cannot understand why Gallo-"Italic" and Corsican are both ascribed to Italo-Romance. Moreover, I argued that, even after having hypothetically been informed about the ad hoc treatment reserved to Gallo-"Italic", the reader cannot know in which group to locate any other non-Gallo-"Italic" geolect, since s/he cannot know whether that given geolect too deserves the—by definition unpredictable—ad hoc treatment or not. I concluded that what results is not *one* classification, but rather a *non-organic conglomeration of 'pieces'* of two distinct classifications. Such a conglomeration of 'pieces' of classifications cannot be informative from the *Abstand* nor from the *Ausbau* standpoint and for this reason has to be rejected.

Then I illustrated the 'LACK OF QUANTITATIVE EVIDENCE' PROBLEM, a further epistemological inconsistency showing up in some pro-Italo- studies, namely in von Wartburg (1967) (see Chapter 3, in particular Sections 3.1.1 and 3.2.7)-where Abstand and Ausbau criteria seem not to be mixed—and in some mixed-criterion studies (see Chapter 2, in particular Section 2.2.1). These studies, besides recognizing or simply describing Gallo-"Italic" as genealogically Gallo-Romance, refer to some purported effects of linguistic convergence of Gallo-"Italic" upon Tuscan/Italian/Italo-Romance as an (additional) Abstand argument for grouping Gallo-"Italic" with Peninsular geolects rather than with uncontested Gallo-Romance. The point that I made is that these scholars make a statement that is quantitative in nature but they do not provide quantitative evidence for it, i.e. that Gallo-"Italic" actually became more similar to the bordering Peninsular second-cousin varieties than to the bordering Gallo-Romance sister varieties. Therefore, even before my current study provided empirical evidence against it, their proposed grouping should be rejected for more general epistemological reasons, namely because, notwithstanding the fact that it required support from *empirical quantitative* evidence, those scholars ultimately did not provide such evidence. Said differently, notwithstanding the fact that these scholars' problem (i.e. 'what synchronological classification for Gallo-"Italic"?") was an empirical one, namely one that could and should be solved empirically (i.e. by measuring and comparing linguistic distance across Alps and Apennines, by means of some empirical method), they proposed a solution (namely their

"classification") to such a problem without testing it empirically (this is an epistemological inconsistency). Besides this major problem concerning the lack of quantitative evidence, I showed that these studies also present a SECOND FORM OF THE TAXON PROBLEM (see Section 2.2.1). Indeed, even assuming as a working hypothesis that the critical convergence that they claim really occurred, they inconsistently mix in a unidimensional and formally (but as a matter of fact only predominantly) genealogical "classification" two distinct classificatory criteria, namely the genealogical one and the synchronological one. In these studies, some purported synchronological arguments decide the ascription of Gallo-"Italic" to the Italo-Romance group, which is in turn identified on the basis of the genealogical criterion applied to the sole Peninsular geolects. The two criteria should, however, establish two distinct classifications, because recent linguistic developments cannot change the genealogical nature of a geolect. Specifically, I argued that one cannot state 'Gallo-"Italic" is genealogically Gallo-Romance but contact with Tuscan/Italo-Romance over the centuries made it became Italo-Romance', since this would imply an impossible jump back into time. Indeed, Italo-Romance, too, is normally presented as a genealogically identified group (based on Peninsular traits) and, in genealogical classifications, the identification of the groups is based on the sharing of substrate effects and primitive changes, and not on more recent contact-induced changes and irrelated convergence after the split. To take the most benign position towards the studies at issue, I argued that one could conjecture that the entire classification proposed in them is consistently intended as ultimately being a synchronological one, understanding that in all the non-Gallo-"Italic" parts of the classification the synchronological grouping continues the genealogical one and coincides with it. However, I argued (see Section 2.2.1.1) that, if in the pro-Italo- studies at issue the classification was intended to be ultimately synchronological, the genealogical grouping should have been put apart for *all* the geolects classified, and a new general grouping for all Romance geolects-and not only for Gallo-"Italic"should have been identified *empirically* on the basis of linguistic similarity among all Romance geolects as a whole. Instead, in the pro-Italo- studies that suffer from the 'lack of quantitative evidence problem', the synchronological grouping of the non-Gallo-"Italic" geolects is not even discussed, and its coincidence with the genealogical grouping—if understood by those scholars would be given for granted. Hence, the grouping of non-Gallo-"Italic" geolects is, as a matter of fact, only motivated by genealogical arguments. This makes the grouping of the entire
"classification" not entirely based on genealogy nor entirely based on synchronology. At least for this reason, the "classification" should be rejected.

In this thesis I have also presented what I have named the '*A PRIORI* EXCLUSION' PROBLEM, which also concerns grouping. By definition, this problem cannot be considered proper to the pro-Italo-tradition. Indeed, it exactly consists of the exclusion of Gallo-"Italic" from the list of varieties analysed and classified in some *Abstand*-based quantitative studies, so that no ascription at all is proposed in those studies for Gallo-"Italic". However, its effects can be in some respects equated to the ones of the ontological problem. I have shown in fact that some scholars, by some genuine *Abstand* criteria, have classified a very limited number of geolects, previously selected by an *Ausbau* criterion. In this way, they have excluded *a priori* most geolects that presented the conditions of applicability of the *Abstand* criterion itself, among which is Gallo-"Italic", finally providing very partial *Abstand* classifications that cannot in any case tell us anything as to which *Abstand*-identified group Gallo-"Italic" should be ascribed to.

5.1.1.2. PROBLEMS CONCERNING LABELLING

In the previous section I summarised the arguments by which I contested and rejected *grouping* Gallo-"Italic" *with* Peninsular geolects in whatever *Abstand*-based classification. As a matter of fact, scholars who did so grouped Gallo-"Italic" and Peninsular geolects together into a group/taxon labelled 'Italo-Romance' or 'Italian language'. However, the *label* used by those scholars in order to name that group was not the direct object of my criticism, which moved instead against the *grouping* itself. Beside the problems concerning grouping (i.e. the ontological, the ad hoc, and the lack of quantitative evidence problems), I argued that two further problems surfacing in the pro-Italo- literature specifically concern labelling. I argued that they deserved to be addressed separately as conceptually distinct from the problems concerning grouping, although intimately entangled with them.

The first one is the 'INERTIAL USE OF THE NOMENCLATURE' PROBLEM. I argued against the label 'Italo-Romance' itself when used to name whatever group/taxon that includes Gallo-"Italic". I argued that ascribing Gallo-"Italic" to a group labelled 'Italo-Romance' should be rejected even in the conjectural case in which a pro-Italo- scholar correctly recognizes the conceptual distinction between *Abstand*-based and *Ausbau*-based classifications and their mutual independence (namely s/he does not mix these two criteria), however uses inertially and knowingly the traditional

genealogical (which is a kind of *Abstand*) nomenclature (i.e. Italo-Romance, Gallo-Romance, etc.) in a genuine and consistent *Ausbau*-based classification for expressing the current sociolinguistic relationship among geolects. Indeed, I pointed out that two distinct classificatory criteria (i.e. sociolinguistic relationship and genealogy) applied to the same set of geolects should be expected to result in two different distributions of the geolects among the sub-groups, so that the sub-groups partially overlap reciprocally. In such a probable case, the nomenclature that matches (and informs about) the genealogical sub-grouping cannot match (and inform about) the sociolinguistic sub-grouping. For identical reasons, the genealogical label 'Italo-Romance' should not be used to name a group/taxon identified by the synchronological criterion. This line of reasoning would be valid in its own right even if one demonstrated that the labelling form 'Gallo-Romance, Italo-Romance, Ibero-Romance, etc.' was not originally meant as a genealogical nomenclature. Indeed, what is relevant in the point that I made is not *what particular form* each of these distinct nomenclatures *have to be formally different*.

The second problem concerning labelling that I illustrated is the DISHARMONIOUS USE OF THE LABEL 'ITALIAN/ITALY' ALONG WITH GENEALOGICAL LABELS. In Section 3.1.2, I pointed out that von Wartburg (1967), differently from e.g. Pellegrini (1975, 1992) and Loporcaro (2009), avoids the questionable inertial use of the typical genealogical label 'Italo-Romance' for naming a group the set of Cisalpine plus Peninsular geolects-(purportedly) identified on the basis of the synchronological criterion, by labelling it "Italian" (see also Section 2.2.3). However, I also argued that by doing so he did not solve the underlying (second form of the) ontological problem that affects his "classification", since the group that he labels "Italian" is represented in his study at the same categorial level of Gallo-Romance, Ibero-Romance, etc., in contrast-namely in complementary distribution—with them in a unidimensional "classification". Rather, differently from the abovementioned studies (e.g. Pellegrini 1975, 1992; Loporcaro 2009), he simply makes (the second form of) the ontological problem visible in the nomenclature. Von Wartburg then, besides inconsistently mixing two classificatory criteria (the second form of the ontological problem), also mixes the labels proper to those two different classifications into the nomenclature of one unidimensional "classification" (this is the disharmonious use of 'Italian/Italy' problem). The grouping and the relative nomenclature are therefore uninformative, hence they are not useful for scientific purposes and for this reason have to be rejected.

So far, the pro-Italo- stance (both grouping and labelling) could be rejected on the basis of mere epistemological arguments, without needing any recourse to new linguistic evidence: in a nutshell, the pro-Italo- scholars (1.) inconsistently mixed two independent classificatory criteria and/or nomenclatures within a unidimensional "classification", which is consequently uninformative, hence not useful for scientific purposes; and/or (2.) did not provide quantitative evidence that the possible convergence upon Italo-Romance mentioned was such so as to entail-as they claim-a reversal in the order of linguistic similarity across the two bundles of isoglosses at issue. It seems to me that these epistemological arguments are sufficient to state that there are no reasons to group modern Gallo-"Italic" with the bordering Peninsular geolects in contrast with the bordering uncontested Gallo-Romance geolects, even from the synchronological standpoint. Indeed, without *empirical counter-evidence*, one can assume that the Gallo-Romance genealogical profile of Gallo-"Italic"-universally resulting from linguistic descriptions, also in the pro-Italo- studies-still corresponds to a linguistic similarity between Gallo-"Italic" and the bordering sister Gallo-Romance variety that is greater than the linguistic similarity between Gallo-"Italic" and the bordering second-cousin Italo-Romance variety. However, in the current study, I wanted to be even more resolutive, also providing the quantitative empirical evidence which was and is necessary but still missing in the literature in order to test the claimed but not demonstrated 'critical linguistic convergence' scenario and consequent pro-Italo- synchronological grouping. I did so in part II (Chapter 4) by testing what I called "the post-Wartburg hypothesis". Below I will recall the results of that empirical study.

5.1.2. PART II: EMPIRICAL EVIDENCE REJECTING THE CLASSIFICATION OF GALLO-"ITALIC" AS ITALO-ROMANCE

In this thesis, I analysed the work of von Wartburg (1967) as an ideal representative of all the possible scholarly literature—including some 'mixed criterion' studies—in which grouping Gallo-"Italic" with Peninsular geolects is supported by some synchronological (alleged) arguments and claims. In a nutshell (see Section 3.2.8), von Wartburg (1967) claims that the genealogically Gallo-Romance geolects historically spoken in the Po valley and Romagna (Gallo-"Italic") underwent a linguistic convergence towards Italo-Romance. As a result of this, Gallo-"Italic" became more similar to the bordering Italo-Romance geolects (which lay south of the Massa-Senigallia line) than to the bordering uncontested Gallo-Romance geolects. This in turn equates to saying that the line dividing Gallo-"Italic" from Occitan on the Western Alps became a more substantial bundle of isoglosses than the Massa-Senigallia line. I pointed out, however, that von Wartburg (1967) makes this claim without providing evidence supporting it. In the second part of this thesis, I tested his claim, which, for this purpose, I re-named "the post-Wartburg hypothesis".² On the basis of the link between the intelligibility rate on the one hand and *Abstand* between geolects on the other, which I presented in Section 4.1.1, I argued that the post-Wartburg hypothesis makes some testable predictions in terms of intelligibility rates, namely that the intelligibility rate is higher and decreases less abruptly across the Tuscan - Gallo-"Italic" border than across the Occitan - Gallo-"Italic" border. By means of the SPIN method, I collected and compared intelligibility scores between geolects spoken in two chains (which I labelled as chain A and B) of localities running from the Occitan-speaking Alps of France to the Tuscan-speaking Apennines. The results of all the measurements, statistical tests, and comparisons conducted in both chain A and chain B studies provided evidence that the intelligibility rate is lower and decreases more abruptly across the Apennines than across any line cutting the rest of the territory investigated, from the Occitan Alps in France to the Romagnol Apennines. This is incompatible with the post-Wartburg hypothesis and is direct evidence against it. In linguistic terms, results indicated that Gallo-"Italic" is still linguistically more similar³ to the bordering Occitan varieties than to the bordering Tuscan varieties.⁴ In order to be as scrupulous as possible, I pointed out that these results as such merely said that, 'based on similarity, Gallo-"Italic" groups with Occitan and not with Tuscan', but could not say 'Gallo-"Italic" is classified as Gallo-Romance', namely, they could not directly pinpoint the position of Gallo-"Italic" within the traditional Romance sub-grouping. However, I argued that other (dialectological and historical linguistic) considerations developed in the traditional literature indicated more specifically as to what group Gallo-"Italic" should be ascribed among the ones identified by the traditional scholarly literature. Specifically, they indicated that Gallo-"Italic" should be classified as Gallo-Romance. Indeed, in the literature that I currently analysed, (1.)

 $^{^{2}}$ One should recall that what I named 'the post-Wartburg hypothesis' was not formulated by von Wartburg himself as a hypothesis but rather as a claim (that is why I did not name it 'von Wartburg's hypothesis'). It is I who wanted to test this von Wartburg's claim, hence I proposed it in the form of a hypothesis.

³ For the particular meaning that the expression *'linguistic* similarity' has when linguistic similarity is considered in relation to the results of the current empirical study, see Section 4.3.4.6.

⁴ It would be even more so in von Wartburg's time, when Gallo-"Italic" was less Italianized than today.

between Western and Eastern Romania tertium non datur⁵ (meaning that the existence of a third group is not theorized) neither from the genealogical or from the synchronological point of view, implicitly also between Gallo-Romance and Italo-Romance; (2.) Occitan is ascribed to Western Romance and in particular to Gallo-Romance; and (3.) Gallo-"Italic" is described as sharing all the inherited traits that are considered relevant in identifying Western Romance and specifically Gallo-Romance. I also showed that considerations of a different kind, some of which developed in previous literature, increase the pro-Gallo-quantitative relevance of the results of the current study, suggesting that the magnitude of the difference between the intelligibility scores obtained across the Alpine and the Apennine borders is smaller than the one that would most properly answer the current research questions: (a.) firstly, the well-known medieval convergence of Tuscan upon Cisalpine (e.g. Rohlfs, 1949-1966) suggests that the intelligibility scores obtained in the current research by Tuscan participants on Gallo-"Italic" stimuli can be assumed to be higher than the ones obtained by hypothetical 'non-Cisalpinised' Tuscan speakers. These latter scores would be more correctly informative of the degree of *convergence of Gallo-"Italic" towards Italo-Romance*, which is the precise object of interest of the current research; (b.) secondly, assuming that in the current empirical study participants' standard Italian competence had an effect on intelligibility score, such an effect is likely to have been larger on Tuscan participants' scores (obtained on Emilian and Romagnol stimuli, i.e. across the Apennines) than on Piedmontese and Occitan participants' scores (obtained on each others' stimuli, i.e. across the western Alpine bundle of isoglosses). Indeed, 2008; Goebl al., 2019 previous literature (Goebl, et http://dialektkarten.ch/dmviewer/ais/index.it.html) shows that standard Italian is more similar to Emilian and to Romagnol than to Occitan and to Piedmontese; (c.) finally, the fact that Occitanspeaking participants from France do not share Italian as standard language with the other groups in the chain (including the Tuscan group) suggests that, if it was possible to fully control 'standard Italian competence' as a variable, the differences between the scores and between the magnitudes of difference measured across the Alpine bundle of isoglosses and across the Apennine bundle of isoglosses, would have resulted as being even greater than the ones that resulted.

⁵ This Latin expression means 'a third option is not possible'. See Section 4.4 footnote 88.

The results of the empirical study ultimately respond to the following Loporcaro statement. In this concluding section, this Loporcaro statement seems apt for summarizing in a concise way the pro-Italo- synchronological claim and its inconsistency, and the reasons for the choice of the method that I used in the current empirical study:

"Among the reasons why we do not define Turinese as a Gallo-Romance dialect, and instead define it as an Italo-Romance one—like Sicilian—is also a strictly linguistic reason. Between Turin and Sicily there extends a dialectal continuum, that is a territory on which the dialects that evolved locally, starting from Latin, are linked together by a «chain of intercomprehensibility»: in whatever locality, the speakers of the local dialect understand those of the immediately adjacent localities, and vice versa. If such a continuum did not exist, in the presence of structural differences such as those exemplified above [Loporcaro, 2009: 10-12, 82-91, see also 16; see Section 2.1.2.1.1], we would have *much more serious difficulty* in classifying both Turinese and Sicilian as Italo-Romance." (Loporcaro, 2009: 13 [emphasis added]).⁶

It is important to note that in this statement no reference is made to what happens between Turinese and Occitan (of Italy and of France) in terms of intelligibility ("intercomprehensibility"). However, such a missing piece of information, in particular whether intelligibility is lower between Turinese and Occitan than between any other adjacent varieties of Italy, would be actually necessary in order for Loporcaro to draw his conclusion above. The current empirical study fills the gap made exactly by this lack of information, demonstrating that in the Romance continuum (where, by definition, geolects are supposed to be mutually intelligible to some however small extent, even across the most substantial internal bundle of isoglosses), between the Western Alpine and the Apennine bundles of isoglosses, the one across which intelligibility is lower and lowers more abruptly is the Apennine bundle. This means that, based on Loporcaro's very line of reasoning, we have to necessarily conclude that "classifying Turinese [and more in general Gallo-"Italic"]... as Italo-Romance" is untenable. Instead—and more exactly—we have to conclude that Gallo-"Italic"

⁶ Fra i motivi per cui definiamo il torinese un dialetto non gallo- ma italo-romanzo, come il siciliano, c'è anche una ragione strettamente linguistica. Fra Torino e la Sicilia si stende un continuum dialettale, ovvero un territorio sul quale i dialetti evolutisi *in loco* a partire dal latino sono legati fra loro da una «catena di intercomprensibilità»: presa ogni località x, i parlanti del dialetto locale capiscono quelli delle località immediatamente adiacenti, e viceversa. Se un tale continuum non esistesse, in presenza di differenze strutturali quali quelle sopra esemplificate avremmo ben più gravi difficoltà a classificare sia il torinese che il siciliano come italo-romanzi.

synchronological classification, despite the obvious existence of an intelligibility continuum between Turin and Sicily to some extent, which is implicit in the very concept of a *Romance continuum*.

5.1.3. SUMMARY OF EPISTEMOLOGICAL AND EMPIRICAL ARGUMENTS AGAINST CLASSIFYING GALLO-"ITALIC" AS ITALO-ROMANCE

In summary, the following conclusions can be drawn from the present thesis:

- The pro-Italo- scholars unanimously describe Gallo-"Italic" as showing all the inherited linguistic traits that in their same studies are said to distinguish Western Romance, and in particular Gallo-Romance, from Italo-Romance. For this reason, the pro-Italo- scholars would be expected to overtly classify it as *genealogically* Gallo-Romance. This conclusion is in line with Hull's (1982) and Tamburelli & Brasca's (2018) conclusions and with Goebl's (2008) data and analyses;⁷
- The necessity that nomenclature be informative and unambiguous entails that it is not appropriate to ascribe Gallo-"Italic" to an *Ausbau*-identified group labelled 'Italo-Romance', since this latter form of labelling is normally used in genealogical (which is a type of *Abstand*-based) classification;
- For the same reason as (2.), it would not be appropriate to ascribe Gallo-"Italic" to a synchronologically identified group labelled 'Italo-Romance', even if it were demonstrated that Gallo-"Italic" had really become more similar to Tuscan/Italo-Romance than to Occitan/Gallo-Romance;
- 4. It would not be appropriate to ascribe Gallo-"Italic" to a synchronologically identified group named by the geopolitical/literary label 'Italian' or 'Italy', including it in a nomenclature along with the typical genealogical labels (e.g. like in von Wartburg 1967, map 10, reported in Figure 3.2). It would not be appropriate even if it were demonstrated that Gallo-"Italic" has really become more similar to Tuscan/Italo-Romance than to Occitan/Gallo-Romance. In this case, indeed, besides showing the inconsistency presented

⁷ As presented in Section 3.3.4, footnote 64, in Hans Goebl's work that I am aware of, the Gallo-Romance genealogical and/or synchronological nature of Gallo-"Italic" is not explicitly stated. However, it seems to be implicit in some statements of his (e.g. 2008: 44, 58), as it seems to be implicitly denied in at least as many of his statements (e.g. 2008: 26, 43, 45, 48).

in (3.), the typical genealogical labels would be formally disharmonious with the geopolitical/literary label 'Italian' or 'Italy';

- 5. The results of the empirical study presented in the current thesis demonstrate that it is not appropriate to classify (group and label) present-day Gallo-"Italic" with/as Italo-Romance in a *synchronological* classification. This conclusion is in line with Hull's (1982/2017) conclusion and with the data and analysis of Goebl (2008). Rather, they demonstrate that, notwithstanding whatever possible linguistic convergence upon Italo-Romance it could have experienced during the last centuries, Gallo-"Italic" is still more similar to the bordering uncontested Gallo-Romance than to the bordering Italo-Romance, therefore any different and complementary grouping/labelling for Gallo-"Italic" which is different from the genealogical one, namely 'Gallo-Romance', remains untenable;
- 6. Some dialectological and historical linguistic considerations developed in previous literature strengthen the pro-Gallo- interpretation of the current empirical test results (see Section 5.1.2, points (1), (2) and (3) between Western and Eastern Romania *tertium non datur*, etc.; and points (a), (b) and (c) convergence of Italo-Romance towards Cisalpine, etc.).

5.2. ORIGINALITY AND SIGNIFICANCE OF THE PRESENT THESIS

In this section I will list what seem to me to be the original concepts and arguments that I introduced and developed in this thesis, and which seem to me to have had a significant function in answering what ultimately is the most general research question at the basis of the current thesis: 'does Gallo-"Italic" group with Gallo-Romance or with Italo-Romance?' I can consider all these concepts and arguments 'original' insofar as the classification of geolects of Italy is concerned. I can be less confident of their originality as the research field gets larger, and my knowledge of the respective literature gets proportionally more limited, from the geolects of Italy, to Romance geolects, to the classification of geolects of other linguistic families, and so forth. Some original aspects can be found in both part I (epistemological arguments developed in Chapters 1 to 3) and part II (empirical study presented in Chapter 4).

PART I. As far as part I is concerned, I showed that the linguistic classificatory literature needs some reflections on some philosophical aspects of scientific classification. These reflections can ultimately be traced back to asking and answering the very general question '*what* does a

classification of geolects *serve for*?' Awareness that this question should be answered *before* proposing a linguistic classification seems to be missing in the traditional Romance linguistic classificatory literature, and certainly in the literature devoted to classification of geolects of Italy that I am aware of. More analytically, the current study introduces the following reflections and concepts:

- I have taken from the epistemological and zoological literature the crucial concept that in scientific research, *classification is an informative tool* (see Brasca 2020, 2021), and that informing about the highest number of relevant features (relevant for a given classificatory criterion) is *the reason why* scientists classify things, and why they group them in one way and not in another. In the current study, I have shown examples of how some pro-Italoscholars seem to not be aware of the relevance of the informative function of their proposed "classification" (see Chapter 2). This attitude can be summarized in the way Lausberg (1965) refers to his own proposal of "classification": "Therefore, we have an *unequally motivated* series of ten Romance idioms..." (emphasis added, see Section 2.2.1.2);
- 2) In previous literature on geolects of Italy I have not found explicit reference to the crucial *distinction between unidimensional and bidimensional classifications* (see Brasca 2020, 2021). I have taken these concepts from epistemological literature rather than from linguistic literature. Some awareness of this distinction should be implicit in passages where linguists recognise that different kinds of classification can be given for the same set of geolects (e.g. *Ausbau* and *Abstand*, see Section 1.4), but in Chapter 2 I have shown that the pro-Italo- scholars seem not to consider this possibility and insist on proposing what seems to be in their opinion 'the only possible' unidimensional "classification" of geolects of Italy;
- 3) More specifically, more originally, and more importantly, I have shown that it would be in any case reductive to trace back the problem of the two irreconcilable ascriptions of Gallo-"Italic" only to the limit presented in bullet point (2), that is to the mere lack of awareness that distinct and equally correct classifications can be proposed. Namely, I have shown that we cannot liquidate the problem by stating that 'in the pro-Italo- literature, *Italo-Romance* is a sociolinguistic (*Ausbau*) label', contesting the pro-Italo- studies for having reductively proposed only a sociolinguistic classification for Gallo-"Italic" and not also a genealogical (or more in general an *Abstand*-based) one. Indeed, such legitimate *declaredly Ausbau*-based classification (leaving apart for the moment the problem of the inappropriate inertial

use of the genealogical nomenclature that would be made in it), would at least have *declaredly* left open the question 'what genealogical (or/and synchronological) classification for Gallo-"Italic" then?' In this desirable case, we could expect that the same scholars would have tried long since to answer this latter question by proposing a complementary genealogical (or/and synchronological) classification for Gallo-"Italic". Instead, I have shown the following:

- a. the pro-Italo- studies (excluding von Wartburg 1967) grouped Gallo- "Italic" with Peninsular geolects on a sociolinguistic (or geopolitical) basis into a group labelled 'Italo-Romance', previously identified by the genealogical criterion (see Brasca 2020, 2021). I have shown that this is formally unsustainable (this is the ontological problem shown by all the 'mixed criterion' studies);
- b. apart from Loporcaro (2009), who at least overtly declares that his proposal of "classification" results from the application of "a mixed criterion" (see Section 2.1.2.1.1), in other 'mixed criterion' studies such mixing is camouflaged into a formally and declaredly genealogical "classification" (e.g. in Hall Jr 1974, 1976; see Section 2.1.2.4).

This latter fact, combined with the fact that non-classificatory studies also generally accept and propagate the definition of Gallo-"Italic" as (part of) "Northern *Italo-Romance*" (see Section 3.1.3), could ingenerate in students and scholars who were and are not familiar with the geolects of Italy the erroneous idea that the literature offers *two* competing proposals of *genealogical* ascription for Gallo-"Italic" (i.e. to Gallo-Romance and to Italo-Romance), and that the two irreconcilable ascriptions represent a typical case of disagreement concerning the relative chronology of change, logically solvable by means of (possibly new) dialectological and philological evidence. In reality, I showed that the pro-Italoscholars do not overtly propose a genealogical ascription of Gallo-"Italic" to Italo-Romance,⁸ rather they include Gallo-"Italic"—as I have presented above—into the *Abstand*-identified Italo-Romance group, based on *Ausbau* criteria. As a consequence, in all the mixed criteria studies we can see a formal (epistemological) flaw: *(a.)* the criteria

⁸ Possibly excluding Hall Jr. (1974, 1976): in Section 2.1.1.2.4 see the family tree reported in Hall Jr. (1974), which is in any case inconsistent with Hall's linguistic descriptions themselves.

are mixed (ontological problem); and in most of these studies we can see a further formal (epistemological) flaw: (b.) it is not declared that the criteria are mixed. The flaw b makes it necessary to unveil the flaw a by following, step by step, the various scholars' statements, as I did in Chapters 2 and 3. The same applies, *mutatis mutandis*, to the studies where what is (not declaredly) mixed is the genealogical and the synchronological criteria;

- 4) I have also drawn attention to the crucial *distinction between genealogical and synchronological classification*. A similar distinction is present, for instance, in McMahon & McMahon (2005) and in Goebl (2008), but seems to be neglected in traditional and more recent literature on the geolects of Italy, where Gallo-"Italic" is normally and unidimensionally presented as an Italo-Romance sub-group (often as "Northern Italo-Romance", see Section 3.1.3), without a reference to a possible genealogical or synchronological interpretation of that label being made;
- 5) I also introduced the *distinction between the 'category problem' and the 'taxon problem'* (the two faces of the 'ontological problem', see Section 2.1.1). I grounded my arguments in favour of this distinction on epistemological literature, rather than on linguistic literature. I showed that these two problems need to be faced with distinct arguments. In classifications where the taxa labelled "Italian language" or "Italy" lay on the same categorial level of the taxa "Gallo-Romance" and "Ibero-Romance" (e.g. von Wartburg 1967, map 10, reported in Figure 3.2; Lausberg 1965), two distinct problems—subtly and intimately entangled with each other in the classificatory narrative—should be recognized. The first one is the taxon problem, which is ingenerated by mixing criteria when answering the question 'what taxon should Gallo-"Italic" be ascribed to?'. The second one is the category problem, which is ingenerated by mixing criteria when answering the question 'how do we conceptualize the category *language*'? These two questions seem to not be properly distinguished even in more recent literature that, in line with the UNESCO view, validly argues against the traditional and official definition of Gallo-"Italic" languages as 'dialects of the Italian language';
- 6) I also introduced the due distinction between inconsistencies ('problems') concerning grouping and inconsistencies concerning labelling (see Brasca 2020, 2021). Specifically, I argued that what should be rejected is not only grouping Gallo-"Italic" with Peninsular geolects from any Abstand standpoint (genealogical and synchronological), but also

ascribing Gallo-"Italic" to a group *labelled* 'Italo-Romance', even from the *Ausbau* standpoint and even from the synchronological standpoint, and even if one day Gallo-"Italic" were really to become more similar to the bordering Italo-Romance than to the bordering Gallo-Romance. I also added that if the label 'Italian' was meant to name a hypothetical strongly Tuscanising *Sprachbund* formed by the genealogically distinct Cisalpine and Peninsular groups as its exclusive members, it should in any case be harmoniously used alongside other formally similar labels, and not alongside typically genealogical labels (i.e. Gallo-Romance, Ibero-Romance, etc.) as some pro-Italo- scholars instead do;

7) A further important reflection that was due and I hope I have stimulated in the current thesis, taking my cue from epistemological rather than from linguistic literature, concerns the distinction between 'definition' and 'identification' of the grouping. When grouping empirical entities like geolects, the *identification* of groups results—by definition—empirically, namely it follows logically and chronologically the description of the items (geolects) to be classified. *How many* and *what* groups there are is not previously *defined* by the classifier's conceptualisation, rather it derives necessarily from the observation of the items, and the researcher just 'takes note' of it. This entails that when classifying geolects according to, say, the synchronological criterion, the genealogical and sociolinguistic groupings (and nomenclatures) should be left apart and not used as pre-established 'containers' (supra-ordered taxa) of the new synchronological grouping.

PART II. Here are some of what seem to me original and significant aspects of part II of this thesis:

- (Mutual) intelligibility was never functionally measured before between Gallo-"Italic" geolects nor between Gallo-"Italic" and Occitan geolects. Therefore, these intelligibility rates were never compared between them before;
- 2) In Tamburelli (2014), the intelligibility of Lombard (a Gallo-"Italic" language) to Tuscan speakers was measured; however, that score was not compared with any Gallo-"Italic" Gallo-"Italic" score, nor with any Gallo-"Italic" Occitan score, like was done instead in the current study. In Tamburelli (2014), scores effectively served towards questioning and rejecting the traditional definition of Lombard as an "Italian dialect", but not towards answering the question whether Gallo-"Italic" is more properly grouped with Gallo-Romance, like the scores collected in the current study instead did;

- 3) Linguistic distance between Occitan, Gallo-"Italic", and Tuscan (and other Peninsular and Sardinian) geolects was already measured and compared in Tamburelli & Brasca (2018), but in that study linguistic distance was measured and compared by dialectometric analyses, not by functional testing as was done instead in the current study. Moreover, in Tamburelli & Brasca (2018), the aim was a genealogical classification for Gallo-"Italic", while the aim of the current empirical study was a synchronological classification of present-day geolects;
- 4) As suggested by McMahon & McMahon (2005: 26-29), besides being a means for "testing" the grouping proposed by traditional dialectology and comparative method, a quantitative method—like the one currently used—presents the following scientific advantages with respect to those methods: it is repeatable, which is an "essential scientific criterion", and allows for the quantification of degrees of affinity. This is a very general and significant characteristic of the current study, which it shares with other quantitative researches on the classification of Gallo-"Italic". The use of quantitative methods in historical linguistics and dialectology—and in linguistics in general—seems to be increasingly encouraged by scholars. Below I report some of the general advantages that have been proposed as deriving from the use of quantitative methods.

McMahon & McMahon (2005: 26-29) point out how traditional comparativists and dialectologists lack instruments for testing and demonstrating the groupings that they propose on the exclusive basis of their qualitative analyses. Consequently, when dealing with the results of traditional comparative analyses, "we have to rely on the experience and integrity [and] individual linguist's knowledge of a particular language group..." which makes the analysis subject "at least potentially, to interference from individual linguists' opinions" (see also Tamburelli & Brasca 2018—in Section 3.3.3—and the studies mentioned there, i.e. Starostin, 2010 and Szmrecsanyi & Wolk, 2011). McMahon & McMahon (2005) call for methods that allow to guarantee the possibility of "getting the same results from the same data considered by different linguists". If this condition is not respected, researchers jeopardize a fundamental scientific criterion: "repeatability." The solution the authors propose "is to add a quantitative dimension" to the traditional qualitative methods. This would offer three benefits to the historical/dialectological research: *1*) it would allow it "to come up with ways of testing and supporting our good methods and results, and of testing and rejecting bad ones", with the supplementary

important advantages—with respect to the traditional comparative approach—of "allow[ing] for the quantification of degrees" of affinity and proposing groupings "which are based on a range of levels of the grammar"; *2)* it would allow the "development of new methods which can supplement the comparative method... where it cannot... be applied"; in short, in *I* and *2* the authors wish "to develop testability for existing methods, and to pioneer new ones"; and *3)* quantitative techniques would allow researchers "to evaluate claims of congruence between historical-linguistic data and those from archaeology and genetics..."; indeed, archaeologists and geneticists tend to prefer methods "providing measurable results". After all, sociolinguistics itself has "benefited considerably from... a quantitative perspective" (see also below), and "corpus-based approaches have produced insights into language change which could not be achieved on the basis of smaller quantities of data collected piecemeal and analysed with the naked eye." Then the authors conclude that if a researcher is seeking "an insight into trends, then computational methods can be of considerable help".

Goebl (2010: 64-72) also presents the advantages of quantitative approaches in dialectological research: "Dialectometry [allows] (with relatively simple statistic means) to uncover in linguistic atlas data lower and higher ranking structural patterns which had hitherto been hidden to the observer at first glance (Goebl 2010: 64)"; in particular, "dendrographic dialectometry is able to reveal relatively deep geolinguistic patterns... (Goebl 2010: 72)" that traditional dialectology does not show. And, specifically concerning the measurement of similarity between geolects, "the Relative Identity Value (RIV_{jk}) has proved to be very useful". By means of this similarity index "the relevant geolinguistic information is transferred from the qualitative to the quantitative level. ... [M]any linguists have difficulty understanding this transition, although it is commonplace in natural, human and biological sciences (Goebl 2010: 65)."

Among the general advantages offered by quantitative methods in modern dialectology, we can mention the ones (also) presented in Chambers & Trudgill (1987: 82). In this study, the quantitative approach, typical of modern urban dialectology, is presented as having suggested some of the basic insights for the foundation of modern sociolinguistics and diachronic linguistics (see also above). In traditional dialectology, data were/are typically collected by questionnaires, while in modern urban dialectology, data are typically

collected from conversations. The quantitative analyses of conversations is exactly what can reveal that different speakers use variants of the same linguistic unit in different percentages, and that this variation is not 'free', as it was previously generally believed; rather, it is linked to social (and/or linguistic) factors. Moreover, quantitative analyses show that this percentage can change in individual speakers' performances over time.

5.3. CONTRIBUTION TO MORE GENERAL AND MORE PARTICULAR LINGUISTIC KNOWLEDGE, BEYOND THE AIMS OF THE CURRENT THESIS

PART I. The following is a contribution to more general and more particular linguistic knowledge provided in Chapters 1 to 3 (critique of the practice of mixing criteria and other epistemological inconsistencies).

1. Showing the epistemological inconsistency inherent to the practice of mixing criteria into a unidimensional "classification" could help future students understand the more direct and formal⁹ reason of the several single particular discrepancies that they are likely to come across in several pages of the traditional and still influential pro-Italo- (classificatory, dialectological and historical linguistics) literature, and that make those pages often incomprehensible. This should make students more confident towards historical linguistics in general, finally perceived as a discipline that can be guided by the same principles in all its geographical sectors, as well as being easy to understand.

PART II. Here are some contributions that the empirical study (Chapter 4) provided to more general and more particular linguistic knowledge beyond the aims of the current thesis.

1. The current empirical study required me to check the potential effect of the following control variables on intelligibility score: participant's gender, (stimulus speaker's) voice gender, participant's Latin and foreign language competence, participant's familiarity with the target locality, participant's previous exposure to the target language, and participant's attitude towards target area and language. The current results (see Sections 4.3.*A*.4 and 4.3.*B*.4) add to the ones obtained in previous studies involving different languages from the ones currently involved, *contributing to a general knowledge of the possible relevance of*

⁹ For a possible *deeper* and *ideological* reason, instead—which in turn can explain that formal inconsistency—see Brasca (2021).

these variables. For instance, the participant's attitude towards both target area and target language resulted as not having an effect on the intelligibility score. This is in line with the findings of "Van Bezooijen & Gooskens (2005) ...[who] found only low correlations between the two, and conclude that there is little evidence of a direct relationship, if any" (Tamburelli, 2021a: 33).

- Beyond the current aims, the results of the empirical study also provided evidence of the *distinction* of Gallo-"Italic" as a taxonomic unit, namely of the contrast between its *internal unity* and its *separateness, especially from the bordering Tuscan geolects* but also *from the bordering Occitan geolects* (see Section 4.3.1, Tables 4.71 and 4.72). These findings are in line with Hull (1982), Goebl (2008) and Tamburelli & Brasca (2018);
- 3. More particularly, the results showed that the internal *Abstand* unity of Gallo-"Italic" *is strong* (see Tables 4.71 and 4.72 in Section 4.3.1 and compare with Tamburelli 2014) and from this arises the question whether Piedmontese, Lombard, Emilian, and Romagnol are different *Abstand* languages or rather geographical varieties of the same *Abstand* language (see Future directions, Section 6.2.1.1);
- 4. Results of the empirical study also *add information to the intelligibility picture resulting in Tamburelli (2014)*. In that study, it is argued that the intelligibility rate of Lombard stimuli to monolingual Tuscan speakers (mean percentage 44.3%) is too low in order to consider Lombard a 'dialect of Italian language'. This claim has now gained more evidence following Tamburelli (2021b), where minimal intelligibility scores between possible dialects of the same language are tested empirically. Based on the same method used in Tamburelli (2014) and on the same arguments proposed there and in Tamburelli (2021b), the current results indicate that neither Emilian nor Romagnol could be reasonably considered as dialects of the Italian language (see Table 4.71). Moreover, Tuscan participants' scores obtained on Lombard filler items,¹⁰ excluded from the statistical tests presented in Chapter 4, are definitely similar to the Tuscan–Lombard scores of Tamburelli (2014) and support their interpretation given in that study;
- 5. In view of a possible policy supporting the revitalization of Gallo-"Italic" (all endangered) languages and of their internal diversity, excluding on an empirical basis that Gallo-"Italic"

¹⁰ Mean percentage= 38.71%, 95% C.I. percentage [32.64, 44.71], SD= 1.998.

could be considered a dialect of Italian language *strengthens the arguments that I provided in the conclusions of Section 2.1.3.2*, wherein I contested Loporcaro's idea that the Italian standard language could be considered the "roof language" for Gallo-"Italic" varieties, playing for them the role of a "protecting roof" (Kloss, 1969: 72. See Section 2.1.2.1.2. See also Vari & Tamburelli 2020, Tamburelli 2021b);

6. One additional advantage of having ran a *functional* intelligibility test¹¹ is that the scores obtained, besides being indirectly informative of the objective linguistic similarity (which is a rather abstract reality, of 'intellectual interest'), *are directly informative of the actual reciprocal communicative potential of the varieties compared*. In this sense, the intelligibility scores collected would be of more 'practical interest' in possible language policy than, say, dialectometric scores, for instance as far as a possible polynomic approach to mass-media strategies is concerned.

¹¹ As presented above, in a *functional* intelligibility test, some audio stimuli are presented to the participants. See Section 4.2.2.2.1 for the advantages of functional testing for the current research aims.

CHAPTER SIX

LIMITATIONS AND FUTURE DIRECTIONS

6.1. LIMITATIONS OF THIS THESIS

6.1.1. PART I. As far as part I is concerned (epistemological arguments, Chapters 1 to 3), I deliberately limited my analyses to some of the most cited 'classical' pro-Italo- classificatory studies, since their being often mentioned in more recent studies as reliable sources for classification of varieties of Italy seemed to me sufficient reason to consider them as still being optimally representative of that still predominant scholarly stance. However, a more complete picture and criticism of the pro-Italo- literature would probably include the analysis of other scholars' studies that are mentioned in recent studies concerning or involving the classification of Gallo-"Italic" and of other varieties of Italy. For instance, future research could build upon the outcomes obtained through this study, specifically concerning the 'category problem' (see Section 2.1.1) by showing how Eugenio Coseriu's concepts and terminology "primary dialects" vs. "secondary dialects" are used in some pro-Italo- studies (e.g. Berruto 1995: 188; Grassi, Sobrero & Telmon 1997: 7-9; Loporcaro 2009: 5). Similar work could be undertaken for Zarko Muljačić's terminology "*dialetti*" (with inverted commas) vs. *dialetti* (without inverted commas), referring respectively to the *Ausbau*-based concept of "dialects for subordination" and to the *Abstand*-based concept of "historico-structural dialects" (Muljačić 1990).

6.1.2. PART II. As far as the empirical study is concerned (Chapter 4), the following limitations can be recognized:

6.1.2.1. In the French Occitan-speaking data points, I tested a number of participants that is smaller than the number of participants tested in each data point of the Italian side of the study (i.e. 24): in

¹ On these concepts, see some references to Montes Giraldo (1984) and (1986) in Muljačić (1990).

Occitan-1 data point I tested 11 participants, in Occitan-7 data point I tested 23 participants. As Keating & Jegerski (2015: 27) point out, "to ensure that each condition has equal weight in statistical analyses, it is desirable to have an equal number of participants exposed to each version of each item". However, the authors continue: "This is not easy to achieve, given that one cannot know a priori how many participants will be removed from a study before analyses are conducted and whether discarded participants will be equally distributed across the different experimental lists in which the items appear". The fact that a smaller number of participants were tested in the French data points is plausibly due to the advanced stage of language shift that the Occitan language (like other regional languages of France) finds itself in, which did not allow the contact people to recruit 24 participants (or preferably even more).

6.1.2.2. As we have seen in Section 4.2.2.2.4, there is some evidence that female voices tend to be more intelligible than male voices (Bradlow et al., 1996). Therefore, in order to control for gender of voice, for each geolect investigated an equal number of stimulus sentences should have ideally been produced by a male and a female voice, and played to the participants. However, in the Occitan-1 locality (France) no female native speakers were available, so two male native speakers were recorded. Data obtained on Occitan-1 stimuli could therefore not be controlled for gender of voice. This difficulty in finding a female voice is likely due to the advanced stage of language shift currently experienced by the Occitan language, plausibly combined with the fact that, in conditions of language shift, women are known to tend to abandon the L language before men (see Labov, 1990; see an overview in Romaine, 2008; see also Price and Tamburelli, 2016; see Sections 4.1.4 and 4.2.3.1).

6.1.2.3. There is evidence that age of voice can have an effect on participants' attitude (see Stewart & Ryan, 1982; also Giles et al., 1992; also Casado-Aranda et al., 2018). Therefore, in order to control for age of voice (i.e. age of the native speakers who uttered the stimuli), all the voices (both male and female) should ideally be of comparable age for all the 10 stimulus localities. This was the case in most localities, where the voices were approximately the same age across genders and localities, namely between 65 and 78 years. However, in three localities (some of) the voices were younger. In the Occitan-2 and Occitan-8 localities (in the Italian Alps), the male and the female voices respectively were about 50 years old; in the Occitan-7 locality (in the French Alps) they were both about 40 years old. This limitation was due to the objective difficulty in involving people

in such small communities in the rather time- and energy-demanding task of translating and recording 64 sentences. In particular, as far as the Occitan-7 locality is concerned, the advanced stage of shift that the Occitan geolects of France find themselves in made it even more difficult for me to approach and involve the last definitely elderly native speakers (see Section 4.2.2.2.4). Then, involving the two younger 2L speakers revealed itself to be the only viable option.² This being the case, it would have been ideal, for the purpose of scrupulosity, that the potential effect of age of voice be checked in the current study, but it was not. This fact presents a limitation as different ages of the voices could result in dividing the participants in different groups according to their attitudes towards age of voice, which would have consequently needed separate statistical analyses. Therefore, in similar future research, it would be in any case preferable that the age of voice be consistent across genders and groups, or that its potential effect be statistically checked.

6.1.2.4. Furthermore, there is evidence that attitudes vary across participants depending on age (see McCullough et al., 2019, and further literature reported there; see also Dhabi, A. A. A. 2017; and Brown, K. M. et al., 2021). Therefore, in order to control for participant's age, in the current study all participants should ideally have been within the same age range in all groups, or they should have been evenly distributed according to their age, across groups and across genders. Therefore, following for instance McCullough et al., 2019 (where the oldest participants' age group ranged from 50 to 75 years), I selected participants between 65 and 80 years old, which is within range of previous research as well as currently being the age range in which speakers of the geolects involved are likely to have developed a native competence (or quasi-native in the French side of the experiment) of the local geolect. In the French side of the experiment, the more advanced stage of language shift and the consequent penury of native speakers and thus possible participants urged me to extend the recruitment to participants who were older than 80 and younger than 65. Hence, it would have been ideal, for the purpose of scrupulosity, that the potential effect of participant's age be checked, but it was not. This presents a limitation as such further verification could result in dividing the participants in different groups according to their age and its potential effect on attitudes, which would have consequently needed separate statistical analyses. Therefore, in larger

 $^{^{2}}$ However, one should note that, besides the limitation that it entailed, this solution presented the advantage of allowing me to include two further older speakers in the list of participants, which risked—and actually revealed—to be difficult to complete.

(i.e. urban) localities with a higher availability of native speakers, it would be in any case preferable to control for the possible effect of the participant's age, in the ways indicated above, or that its potential effect be statistically checked.

6.1.2.5. In Section 4.2.1.1 we have seen that Romagnol (in chain A) and Emilian (in chain B) participants' intelligibility scores on Tuscan stimuli were not collected. Indeed, Gallo-"Italic" speakers of our days are all literate in the Italian language, which is based on Tuscan as well as being very similar to it, therefore those scores would not have been informative for the current aims. In Section 4.4 I have also argued that this formal limitation, as a matter of fact, did not prevent the results of the empirical study from answering the research questions, concluding that the data actually collected were sufficient to test the post-Wartburg hypothesis. Indeed, in each of the two current studies (chain A and chain B), all the scores (in both directions)³ turned out to result significantly higher than the scores obtained by Tuscan participants on Emilian and on Romagnol stimuli, and so did the respective magnitudes of difference. However, this could be stated only after I collected the data and ran the analyses. The linguistic interpretation of the results would have been less resolutive if *not all* or even *a few of* the abovementioned scores resulted to be significantly higher than the Tuscan participants' scores. In particular, if all the other mentioned scores happened to result as being significantly lower than Tuscan participants' scores, the lacking score would have been *indispensable* to answer the research questions, since we cannot exclude that it would be significantly lower than all or of whatever of the single scores obtained. This means that it seems proper to consider the lack of the scores at issue as a formal limitation that in future similar research, if conducted in areas where linguistic proximity to the majority language is not an issue, could prevent all the other data collected from being sufficient to answer a similar research question.

6.1.2.6. As we have seen in Section 4.2.1.4, in three data points out of ten,⁴ the item locality (where the sentences were translated and recorded) did not coincide exactly with the participant locality (where the intelligibility data were collected).⁵ In two out of these three cases, this was due to the

³ In this regard, see the next bullet point for a further limitation.

⁴ 'Ten' and not 'twelve' because I am excluding the two Tuscan localities since they were only participant localities. ⁵ Recall: For the Occitan-2 data point, the 'item locality' was Pradzalà/Pragelato, while the 'participant' locality' was Chaumount/Chiomonte. The 'item locality' for Romagnol-5 data point was Marchèt/Mercato Saraceno, while the 'participant locality' was Sêrsna/Sarsina. The 'item locality' for Lombard-10 data point was Pioltell/Pioltello, while the participant localit*ies* were Cernusc/Cernusco sul Naviglio, Gorgonzœla/Gorgonzola and Pessan/Pessano (see

fact that, after recording the sentences, I was no longer able to involve local people in the role of 'contact person/people' whom I needed in order to contact and recruit the possible participants. In the third case I decided, for personal convenience, to recruit the participants in different nearby localities from the item locality. In Section 4.2.1.4 I have also shown that in each of these three cases the geolect/-s spoken in the participant locality/-ies that I chose was/were indicated by previous literature as belonging to the same dialect group which the item locality geolect belongs to, and that this could be considered a sufficient condition for considering as acceptable that the item locality did not coincide with the participant locality/-ies, despite some obvious differences between the (two) respective geolects. However, a scrupulous reflection suggests that in similar future research it would be preferable that the item locality and the participant locality coincide. Indeed, in Section 4.4 (Discussion) I concluded that the post-Wartburg hypothesis was robustly falsified by the current results since in each of the two studies (chain A and chain B) all the scores (in both directions) resulted as being significantly higher than the scores obtained by Tuscan participants on Emilian and on Romagnol stimuli, and so did the respective magnitudes of difference. This line of reasoning assumes the linguistic equivalence between item locality and participant locality in the data points where these do not coincide, which however cannot be assumed as absolute. This means that, referring to chain A, I cannot consider the scores that I collected from Chaumount participants as perfectly corresponding to the ones that I would have collected from Pradzalà (not recruited) participants. As a consequence, I cannot be completely confident in stating that, between Occitan-1 participants' score on Occitan-2 (Pradzalà) stimuli (percentage mean= 51.93, C.I. 95% 45.86-58.07) and the score obtained in the opposite direction, namely Occitan-2 (Chaumount) participants' score on Occitan-1 stimuli (percentage mean= 66.36, C.I. 95% 62.86-69.86), the first one is really the lowest one between Occitan-1 and Occitan-2 reciprocal scores, since I cannot *logically* exclude that Pradzalà participants' score on Occitan-1 stimuli (namely the scores that I was not able to collect) would be lower than 51.93 and, importantly, lower than Tuscan-6 participants' score on Romagnol-5 stimuli (percentage mean= 36.64, C.I. 31.79-41.43). The same applies to the scores collected in the other two data points, where the item locality does not perfectly coincide with the participant locality. I can at most state that the greater geographical distance of the Occitan-1 locality from Chaumount than from Pradzalà

Section 4.2.1.4).

makes it *more probable* that Pradzalà participants would have scored higher than what Chaumount participants did (which supports the pro-Gallo- stance), but this statement requires an assumption more than it would have been the case if I were allowed to actually use Pradzalà participants' score on Occitan-1 stimuli, the assumption being that intelligibility normally decreases with geographical distance (see Goebl, 2008).⁶ This makes my linguistic interpretation of this part of the empirical tests results 'more dependent' on a previous scholarly statement, which was in turn not empirically tested on the varieties currently involved. Despite this limitation, what allows one to consider the current results sufficient to test the post-Wartburg hypothesis—yet maybe in a way that is formally less rigorous than would be ideal—is that, in chain *B*, such a limitation does not involve the Alpine border, and this is sufficient to exclude that Gallo-"Italic" as a whole became more similar to Tuscan than to Occitan.

6.1.2.7. As presented in Section 4.2.1.1, I replaced the unusable *Occitan-2* (trilingual) participants' intelligibility scores on Piedmontese-3 stimuli with the *Occitan-1* participants' intelligibility scores on Piedmontese-3 stimuli.⁷ I pointed out that this replacement strengthens the pro-Gallointerpretation of the results, given that the Piedmontese-3 stimulus locality is geographically more further from the Occitan-1 participant locality than from the Occitan-2 participant locality. However, in this case, too, this statement requires an assumption more than it would have been the case if I were allowed to actually use Occitan-2 participants' score on Piedmontese-3 stimuli, the assumption being again that intelligibility normally decreases with geographical distance (see Goebl, 2008; see footnote 6). Again, this makes my linguistic interpretation of this part of the empirical tests results 'more dependent' on a previous scholarly statement, which were in turn not empirically tested on the varieties currently involved. Indeed, I cannot *logically* exclude that hypothetical (but no longer existing) non-Piedmontese-3 stimuli significantly lower than Occitan-1 participants (of France) did, nor, importantly, lower than Tuscan-6 participants scored on Romagnol-5 stimuli. However, as presented in Sections 4.1.2, 4.1.5, 4.2.1.1 and 4.4, it would

⁶ "It is obvious that the decrease of similarity measures over space depends, although in various ways, on the increase of the respective geographical distances / \dot{E} ovvio che la diminuzione dei tassi di similarità nello spazio dipende, benché in varia misura, dall'aumento delle rispettive distanze geografiche." (Goebl, 2008: 41).

⁷ Here I only mention chain A localities, but the same applies, *mutatis mutandis*, to chain B.

probably have been possible only until von Wartburg's time to collect data from monolingual (i.e. non-Italian-speaking) Romagnol (and Emilian) speakers, whereas this was no longer possible during the current research.⁸

6.1.2.8. As presented in Section 4.2.2.2.5, previous research has shown that word length has an effect on word recognition (Wiener & Miller, 1946; Scharpff & van Heuven, 1988; see also Kürschner et al., 2008). Indeed, longer words are better recognized because they have fewer neighbours than shorter words (Vitevitch & Rodriguez, 2005), where neighbours are competing word forms that share phonetic material with the stimulus word (Kürschner et al., 2008). Indeed, all the original English versions of the SPIN test sentences ended with a monosyllabic noun (Kalikow et al., 1977). However, only a part of the 64 sentence meanings submitted to the translators turned out to end with a monosyllabic word in all the 10 target geolects once they were translated. I originally considered requiring the translators to propose only monosyllabic or only disyllabic target words, but eventually decided not to force them on this path, as they deemed some of those possible proposals as not being the most common and spontaneous translations of the last original English word and/or not ideal for expressing in the most spontaneous way the meaning of the entire sentence. This fact led me to also include sentences ending with disyllabic words once translated in the target geolects into the item list. In order to control for the target word length, the monosyllabic and disyllabic target words should ideally be evenly distributed among the different groups. However, this was not possible, since I could not decide nor know a priori (i.e. before the translation) how many and what monosyllabic and disyllabic target words the set of target sentences of each target geolect would have presented.

6.1.2.9. As we have seen in Section 4.2.2.2.5, the acoustic list that I presented to the participants was constituted by the same sequence of the same 28 sentence meanings for *almost all* the 10 target geolects (I called these 28 sentence meanings 'canonical'⁹). However, for the Romagnol-5 and

⁸ In any case, scholars agree—as presented above—that Gallo-"Italic" converged towards (standard) Italian language during the last decades, so that possible data collected in the time of von Wartburg's study (i.e. 1950) would have been likely to present an even more pro-Gallo- situation than today.

⁹ In Section 4.2.2.2.5, I named as 'canonical' the sentence meanings that were translated and used as stimuli in *almost* all the 10 target geolects. The need of referring to them as 'canonical' is due to the fact that there were three exceptions (where it was used a 'non-canonical' sentence meaning). For two target geolects, in fact, a total number of three inadequate translations of canonical sentence meanings were replaced with adequate translations of three other non-canonical sentence meanings. 'Inadequate translation' means that it ended with a longer (target) word than disyllabic

Occitan-7 target geolects, I replaced—respectively—one and two inadequate translations of canonical sentence meanings (inadequate because their target word was longer than two syllables) with adequate translations of other three 'non-canonical' sentence meanings. I preferred this solution to the alternative option of eliminating the three sentences from the acoustic lists of all the data points, in order to use the highest number possible of 'canonical' sentences at my disposal, maintaining a number of sentences (namely 28) which are a multiple of the number of conditions (or Latin square levels), namely four (see Keating & Jegerski 2015), this on the assumption that each replacing 'non-canonical' sentence was *approximatively* as intelligible as the replaced 'canonical' one. This assumption was based on the opinion of some native speakers (e.g. the translators) and corroborated by local geolect dictionaries. However, I certainly cannot be sure that each replacing 'non-canonical' sentence was *exactly* as intelligible as the replaced 'canonical' one, and this introduces a possible undesirably non-controlled variable in the test. Therefore, in similar future research it would be ideal, if possible, that all the sentence meanings be the same for all groups of participants.

6.1.2.10. Based on previous literature, I designed the questionnaire that I submitted to the participants in such a way that some questions (i.e. 2, 5, and 6) allowed for a response on a *four*-point rating scale, while other questions (i.e. 1, 7, 8, and 9) allowed for a response on a *five*-point rating scale. After running the statistical tests, however, I realized that using the same scale for all the questions would have allowed for an easier reading and comparison of the descriptive statistics. This is consistent with the literature, for example Dawes (2008: 75), who found that "a scale with more response options produces *slightly* lower scores, relative to the upper limit of the scale" [italic original].

6.2. FUTURE DIRECTIONS

6.2.1. LINGUISTIC QUESTIONS FOR FUTURE RESEARCH

6.2.1.1. Besides being required for answering the current research questions, the intelligibility data collected can conveniently constitute a first step for further investigations concerning (mutual)

⁽see Section 4.2.2.2.5).

intelligibility within the Cisalpine area. Such possible investigations would ask different questions than the current ones, but some of these questions were uncovered and suggested by the current results. Below are some examples (a - e).¹⁰

a. As a corollary of the main thesis, we have seen that the results indicated the strong internal Abstand-based unity of the Po valley and Romagna (see Tables 4.71 and 4.72 in Section 4.3.1 and compare with Tamburelli 2014), raising the question of whether Piedmontese, Lombard, Emilian, and Romagnol should be considered distinct Abstand languages—as Ethnologue¹¹, Glottolog¹², and the UNESCO Atlas of the World's Languages in Danger (Moseley, 2010; http://www.unesco.org/languages-atlas/index.php) indicate-or geographical varieties of the same Abstand language. In order to address this question in a taxonomically complete way, intelligibility should also be measured between the varieties currently analysed and Ligurian (whose involvement was not necessary for the purposes of the current thesis). Indeed, besides agreeing in ascribing Ligurian to the "Northern Italian" (i.e. Cisalpine) group, scholars predominantly-but not unanimously—ascribe it more in particular to Gallo-"Italic" (see an overview on this classificatory debate in Toso 2007). Of some interest for a discussion on the questionable use of the 'bridge metaphor' (that I will shortly present in further research) is Forner (1997) too, who summarizes some traditional scholarly stances, proposing that "Ligurian dialects form part of the Gallo-Italian [i.e. Gallo-"Italic"] system (Ascoli, 1876)¹³, while constituting a *bridgehead* to central Italian (Diez, 1836)" (Forner, 1997: 245, cited in Toso, 2007: 420, [emphasis added]).

b. The high intelligibility rates obtained between Gallo-"Italic" geolects naturally also raises the question as to 'up to where, within the Cisalpine continuum (ideally within the Romance continuum), intelligibility remains high?', which in turn equates to asking 'up to where does this possible single language extend?' Answering this question urges one to integrate the data collected by also measuring intelligibility between the varieties currently analysed and Venetan (whose involvement was not required in order to answer the research questions of this thesis). Indeed, Venetan is traditionally considered part of the "Northern Italian" or Cisalpine continuum

¹⁰ In this section I will use the genealogical labels, assuming that, without new empirical counter-evidence, the current synchronological grouping continues the genealogical one.

¹¹ Lewis, P. et al. (2013). <u>https://www.ethnologue.com</u>

¹² Hammarström, H., et al. (2022). <u>https://glottolog.org</u>

¹³ See Ascoli 1876b in the current References section.

(Pellegrini, 1972, 1977; Hull, 1982; Loporcaro, 2009; but see Ascoli, 1882-1885 for a particular classificatory stance).

c. The intelligibility data presented in this thesis could conveniently also constitute a first step for a wider and finer-grained investigation about (mutual) intelligibility within the Cisalpine area, which could serve for empirically testing the traditional dialectological sub-grouping of Gallo-"Italic" and more generally Cisalpine. Indeed, as the method currently used allowed us to distinguish Gallo-"Italic" as a separate taxonomic unit from Tuscan and Occitan, it could distinguish some possible dialect areas within the Gallo-"Italic" (and more in general Cisalpine) domain. Besides the data collected in the current study, such an investigation would require the collection of data about intelligibility between the varieties currently analysed and the varieties spoken in the following areas (and between these latter), whose analysis was not necessary for the aims of the current study: Liguria, Eastern Piedmont, Eastern Lombardy, the lowlands of Emilia and Romagna (all Gallo-"Italic" varieties¹⁴), and Venetan (in order to extend the analysis to the entire Cisalpine domain).

d. Similarly, integrating the data collected by also measuring intelligibility between the varieties currently investigated (Gallo-"Italic" and Occitan) and Venetan, Romansh, Ladin, and Friulian, would contribute to the long-lasting classificatory debate concerning the Alpine Romance-speaking areas. For instance, it would be possible to see whether the SPIN test identifies so-called Rhaeto-Romance as a current synchronological Romance sub-group separate from Cisalpine (and from Occitan). The existence of a separate Rhaeto-Romance group, formed by Romansh, Ladin and Friulian, was proposed by Ascoli (Ascoli, 1875) but questioned in successive literature, starting from Battisti (1906-1907, 1929, 1937) and Salvioni (1917) (see Pellegrini, 1970, 1992; Hull, 1982/2017. See however Goebl 1995 on a possible misunderstanding spread among scholars about Ascoli's classificatory intentions). Consequently, it would also be possible to see whether the SPIN test identifies a "Rhaeto-Cisalpine" synchronological group. Rhaeto-Cisalpine—or "Padanian"—was proposed as a genealogical Gallo-Romance sub-group by Hull (1982/2017), grouping the whole of Cisalpine (corresponding to the joint of Gallo-"Italic", Venetan, Ladin, and Friulian) and Romansh.

¹⁴ But see above for some scholarly doubts about the ascription of Ligurian to Gallo-"Italic".

e. The SPIN test could help answer similar questions concerning whatever varieties whose ascription to wider linguistic groups, whose internal subgrouping and/or whose boundaries are a matter of disagreement in the literature. For instance, it could indicate a synchronological collocation of Catalan, whose ascription to either the Ibero-Romance or the Gallo-Romance group is debated in the literature (see Bossong, 2016).

6.2.1.2. In order to increase and expand the literature review presented in Chapter 2, in view of the current research questions, future research could gather and analyse the studies that propose for the Romance varieties some groupings and respective labels that are different from the traditional one presented in the current thesis (i.e. Western Romance *vs.* Eastern Romance; Gallo-Romance *vs.* Italo-Romance *vs.* Ibero-Romance, etc.). Some of these are Eva Buchi's & Wolfgang Schweickard's studies, Zamboni (1995), and Benincà, Parry & Pescarini (2016). Below I anticipate a passage from this latter study:

"...let us sum up those characteristics that are shared by all northern Italian varieties, marking northern Italy as part of an innovative sub-area of Romance *comprising French, the dialects of northern Italy, Friulian, Ladin, and Romansh.* From now on we will term this sub-area '*northern Romance*'." (Benincà, Parry & Pescarini 2016: 187 [emphasis added]).

Gathering and analysing these works would tell us in what percentage of them—if any—Cisalpine and Peninsular geolects are grouped as exclusive members of a linguistic taxon. At first glance, it seems that in this literature what is proposed (like in the example above) is a grouping according to which the set of Cisalpine plus Peninsular geolects is *not* presented as constituting a taxon, namely according to which Cisalpine plus Peninsular geolects are *not* presented as exclusive members of one of the "exhaustive and mutually exclusive classes" (Bailey, 1994: 3)—i.e. linguistic groups—in which the Romance domain can be divided. Importantly, these studies add to the pro-Gallo- studies proper, constituting with them what could be defined the '*anti pro-Italo*tradition', larger than the sole pro-Gallo- tradition proper, presented in this thesis (see Section 1.3).

6.2.1.3. Future research could try to develop a method allowing quantitative measurement of linguistic convergence. After distinguishing the effects of convergence of Gallo-"Italic" *towards Tuscan/Italian* from the effects of convergence of Tuscan/Italian *towards Gallo-"Italic"*, a dialectometric analysis should allow one to quantitatively compare these effects. As a general and tentative idea, such a distinction could be done on the basis of, on the one hand, Proto-Gallo-

Romance and Proto-Padanian¹⁵—this latter reconstructed by Hull (1982/2017) and assumed to be essentially devoid of Italo-Romance loans-and a possible reconstruction of Proto-Italo-Romance on the other hand (consistently based on the sole Peninsular geolects.). These proto-languages would be compared with present days Gallo-"Italic" and Peninsular geolects respectively, so that the effects of convergence in one direction and in the other could be assessed and measured (by a dialectometric analysis), ideally for each geolect. Such a study would integrate the current results with a finer-grained knowledge (which was not necessary for the current aims, once the test results are seen) of how much Gallo-"Italic" became similar to (converging towards) Italo-Romance, and how much Italo-Romance became similar to (converging towards) Gallo-"Italic", and then compare these quantities. These results would be able to test the traditional stance, assumed in von Wartburg (1967) and not questioned in the current thesis, according to which Gallo-"Italic" has been heteronomous towards the Tuscan/Italian literary language since the 13th or at least since the 16th century, and that consequently the historical convergence *between* these two groups is preponderantly a convergence of Gallo-Romance in the direction of Italo-Romance, namely a Italicization of Cisalpine Gallo-Romance, rather than the other way around. The results would say (1.) how much present day Gallo-"Italic" (ideally all Padanian) geolects have changed with respect to Proto-Gallo-Romance and to Proto-Padanian, and (2.) how much of this change is possibly due to convergence towards Italo-Romance. They would also give analogous pieces of information about present-day Peninsular geolects with respect to Proto-Italo-Romance. Based on some considerations presented in the next section, it would not be so surprising if the results would reveal that the convergence of Gallo-"Italic" on Tuscan was not only insufficient to reverse the order of intelligibility across the two mountain ranges at issue, as the current study showed, but it was even less than the convergence the other way around (which the current study did not and did not intend to assess). This would equate to saying that the possible increase of intelligibility over the centuries between Peninsular and Gallo-"Italic" would be due more to the Gallicization (or more specifically 'Cisalpinization') of Tuscan/Italo-Romance than to the Italicization of Gallo-"Italic".

6.2.1.4. As presented in the section above, it being unnecessary to question it for the current purposes, in the current thesis I took it as understood the traditional scholarly standpoint according

¹⁵ The Padanian group includes Cisalpine, which in turn includes Gallo-"Italic" (see Hull 1982/2017; see Figure 1.1 in Section 1.1).

to which Gallo-"Italic" has been heteronomous towards the Tuscan/Italian literary language since the 13th or at least since the 16th century. However, new research should question this view as possibly a simplistic one, asking how it alone can explain the changes that Gallo-"Italic" underwent after the 16th (and 13th) century and that are *divergent from* the historical linguistic developments of the Tuscan/Italian literary language (e.g. assibilation of palatal affricates, its position on the Jespersen's cycle, inversion in questions, compulsory subject clitic pronouns, several lexical loans). Helpfully in this regard, Hull (1990) reports from previous literature (Gensini 1982 and Beales 1971) the citations of some texts of late 18th and early 19th century educated Cisalpine people (the famous poets in the Italian language, the Piedmontese Vittorio Alfieri, and the Venetan Ugo Foscolo, usually celebrated among the symbols of Italian Risorgimento) witnessing with regret their own very limited competence and rare usage of the Italian language, and, on the other hand, their predominant use of the French language in informal interactions with other Cisalpine people (in Milan too), in letters, and even in written private "memoriette di viaggio" (travel memories) (see Hull, 1990: 152). Taking place about three centuries after the publication in 1525 of *Prose* della volgar lingua by Pietro Bembo, which is universally accepted by Italian scholars as a symbolic birth date of the Italian language, and consequently of heteronomy of (regional) languages of Italy towards Italian, these testimonies raise the question of whether the influence of the Italian written language on spoken regional languages after 1525 was and is overestimated in the Italian scholarly literature. In this sense, gathering more testimonies like the ones mentioned above about the actual *oral* linguistic habits of pre-unity cultured Cisalpine speakers would be desirable.

6.2.1.5. As far as Prediction 3^* testing is concerned, I considered as sufficient the comparisons of the magnitudes of difference that I presented in Section 4.2.5.2 at bullet points *(i)* and *(ii)*, and conducted in Sections 4.3.*A*.5.6 and 4.3.*B*.5.6. An equal number of comparisons, however, could be conducted involving the scores collected in the reverse directions. Limiting myself to the comparisons that I actually conducted was suggested to me by the following considerations: *(1.)* two reciprocal intelligibility rates are unlikely to be considerably different in condition of reciprocal (non-)exposure (see Hammarström 2008 in Section 4.1.5; see an overview in Tamburelli 2021a); *(2.)* the (significant) difference between intelligibility rates across Apennines on the one hand, and between every pair of Gallo-"Italic" adjacent data points on the other was considerable; *(3.)* given that the measurements and the comparisons of the magnitudes of difference that I did

not conduct were (most likely) unnecessary, conducting and presenting them would have made Sections 4.3.A.5.6 and 4.3.B.5.6 (i.e. the results) unnecessarily longer and harder to read. For the sake of formal completeness, however, in future research these comparisons could be conducted. Specifically, as far as chain *A* is concerned, the following could be compared (the same applies, *mutatis mutandis*, to chain *B*, involving the stimuli/data points in the analogous reciprocal positions):

- the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - o by Romagnol-5 participants on Emilian-4 stimuli, and
 - o by Tuscan-6 participants on Romagnol-5 stimuli,
- *i.* with the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - o by Emilian-4 participants on Piedmontese-3 stimuli, and
 - by Emilian-4 participants on Romagnol-5 stimuli,
- *ii.* and with the magnitude (effect size) of the *possible* difference between the intelligibility scores obtained
 - o by Piedmontese-3 participants on Occitan-1 stimuli, and
 - o by Piedmontese-3 participants on Emilian-4 stimuli.

6.2.1.6. In the current empirical study, a synchronological grouping for Gallo-"Italic" was proposed on the basis of the link found in previous literature between the SPIN test results and "two objective measures of linguistic distance, viz. a lexical similarity index... and a phonological correspondence index..." (Tang & van Heuven 2009: 724). Future research may expand this set of linguistic properties to also include morphology and syntax in combination with the ones considered in this study. This might reveal further similarities between Gallo-"Italic" and uncontested Gallo-Romance geolects, for instance in the formation of clausal negation (Zanuttini, 1997) or in syllabic structure (Montreuil, 2000) (see Tamburelli & Brasca 2018).

6.2.2. CLASSIFICATION AND LANGUAGE POLICY

The Gallo-"Italic" case currently studied can offer an example of the potential importance of language classification for the preservation of lesser spoken languages and their cultures. In this section, I shall propose that the current classificatory results can have some implications in a

possible perspective of language policy for the Gallo-"Italic" varieties. In particular, in Section 6.2.2.1, I shall propose some questions and preliminary analysis for future research and sketch out some considerations on how the acknowledgment of Gallo-"Italic" varieties as *1*) part of (a) language(s) distinct from Italian, and *2*) which is/are grouped with Gallo-Romance, could be a favourable factor for their preservation. All or some of these considerations can also apply to other situations where a similar classificatory issue is found. Finally, in Section 6.2.2.2, I will show how some of the current intelligibility test results suggest specific corpus-planning strategies for Gallo-"Italic".

6.2.2.1. CLASSIFICATION, ACADEMIC SUPPORT, AND INSTITUTIONAL SUPPORT

As we have seen, scholars agree that "[a]mong the European nations, Italy certainly enjoys the privilege of being the *most fragmented* country in its dialects" (see Section 2.1.1.2.3., quotation 3, also 1 and 2; [emphasis added]). However, no effective institutional initiative has to date been put into action in Italy to support such enviable linguistic diversity (Coluzzi, 2007; 2009; Tamburelli, 2014; Coluzzi, Brasca, Trizzino & Scuri, 2018; Coluzzi, Brasca & Miola, 2019; Coluzzi, Brasca & Scuri, 2021),¹⁶ and of the 36 languages that Ethnologue (Lewis, Simons & Fennig, 2013) estimates as being spoken in Italy, today only 12 enjoy recognition and thus some institutional support. According to the UNESCO Atlas of the World's Languages in Danger (Moseley, 2010; see also Soria, 2015), 31 out of 36 are endangered to varying degrees, among them all the Gallo-"Italic" languages: Emilian, Ligurian, Lombard, Piedmontese, and Romagnol. Still, today, except for sporadic cases,¹⁷ Italian linguists seem at the very least insensitive to the alarm expressed by UNESCO (Coluzzi, 2007: 297; 2009: 43; Coluzzi, Brasca & Scuri, 2021). Many of them unconditionally contest the idea that these varieties could be considered '*languages* distinct from Italian' and their right to institutional recognition and support,¹⁸ insisting on referring to them as "Italian dialects". This being the case, we have to notice that if linguists were keen to re-examine

¹⁶ However, as far as Lombard is concerned, a good first step is heading IV 'Safeguarding of the Lombard language (promotion of the Lombard language through its local varieties)' of the Law of the Lombard Regional Council no. 25 'Regional policies in the cultural area – regulatory reorganization', passed on the 7 October 2016. See Coluzzi, Brasca & Scuri 2021.

¹⁷ An exception is represented by the members of the Scientific Committee of SPL (comitato per la Salvaguardia dei Patrimoni Linguistici) <u>http://patrimonilinguistici.it/comitato-scientifico/</u>

¹⁸ Here is an example: <u>http://www.accademiadellacrusca.it/it/tema-del-mese/salvaguardia-lingua-lombarda-legge-regionale</u>

the received pro-Italo- classification of Gallo-"Italic" varieties and openly recognized them as genealogically Gallo-Romance (or, in any case, non-Italo-Romance), in line with their scholarly linguistic descriptions and the outcomes of part I of this thesis, they would implicitly and authoritatively disseminate among their speakers the idea that Gallo-"Italic" is less closely related to Italian/Tuscan than to French, Occitan and Romansh.¹⁹ Importantly, these latter are varieties that Italian institutions, these same linguists, and common opinion universally acknowledge as 'languages distinct from Italian'.²⁰ Could this help Gallo-"Italic" speakers to become aware that their "vernaculars", officially acknowledged as "Italian dialects", are in reality 'languages distinct from Italian'? Could this awareness, in turn, awaken or strengthen a movement in favour of their revitalization? Could this possible movement involve those very academics/linguists too? A positive answer to these questions seems to be suggested (at least) by the fact that the varieties of Italy that enjoy the benefits of being institutionally acknowledged as (local expressions of) minority languages-among the benefits of which is the involvement of linguists in their revitalization efforts-are normally classified/referred to as non-Italo-Romance by Italian linguists. In particular, Occitan and Franco-Provençal of Piedmont are unanimously classified as genealogically Gallo-Romance.

Moreover, the results of the current intelligibility study (and of Tamburelli 2014) indicate that the intelligibility rate—and linguistic similarity—between Italian/Tuscan and present-day Gallo-"Italic" is definitely low. Therefore, besides their genealogical classification, their synchronological classification also shows that Gallo-"Italic" varieties can by no means be defined as 'Italian dialects', but rather as varieties of (an) *Abstand* language(s) which is/are distinct from Italian. This fact should indicate to linguists who recognize and appreciate the benefits of maintaining the cultural diversity in the world, that the Italian language cannot be considered "the kin-standard naturally corresponding to" Gallo-"Italic" varieties, which could play the (possibly) beneficial role of "protecting roof" for them (see Loporcaro's and Kloss's quotes respectively in Sections 2.1.2.1.1 and 2.1.2.1.2). On the contrary, being part of (a) separate language(s) from

¹⁹ Implicitly also to Castilian, Catalan, Galego-Portuguese, etc., namely to all the Western Romance varieties.

²⁰ In this line of reasoning, the Gallo-Romance genealogic and synchronological profile of Gallo-"Italic" varieties would be meant as a sufficient but not necessary condition for claiming their status of independent languages from Italian. Indeed, some genuinely Italo-Romance varieties, e.g. Sicilian, are sufficiently distant from Italian to be considered as separate languages too.

Italian, which is/are hardly intelligible to non-Gallo-"Italic" Italian speakers, Gallo-"Italic" varieties need a dedicated language policy strategy that *protects them from* the indiscriminate expansion of Italian in all the traditional contexts of their use. Awareness of this fact—hopefully stimulated by the current outcomes—could prompt (young Italian) linguists to become authoritative promoters of the official recognition of the Gallo-"Italic" languages and their right to institutional support.

Importantly, explicit acknowledgment by academics that Gallo-"Italic" varieties are not 'Italian dialects', but rather part of (a) distinct language(s) from Italian, would hopefully help Gallo-"Italic" to escape the immobilizing coils of the "*Ausbau* circle" (Tamburelli 2021b), showing as unjustifiable a further delay in extending to the Gallo-"Italic" language(s) the benefits offered by the European Charter for Regional or Minority Languages. This Council of Europe document states that the linguistic rights it is intended to foster are prerogative of speakers of 'regional or minority languages', and that these 'languages' do not include dialects of the official language(s) (this is in a nutshell the "*Ausbau* circle", see Tamburelli 2021b for more detail).

6.2.2.2. CLASSIFICATION AND LANGUAGE (CORPUS) PLANNING

In Section 4.3.1, we have seen that the results of the current empirical study showed that the internal *Abstand*-based unity of Gallo-"Italic" *is strong*, since the mutual intelligibility scores between Gallo-"Italic" data points are high (see Tables 4.71 and 4.72 in Section 4.3.1 and compare with Tamburelli 2014 and 2021b). This raises the question of whether Piedmontese, Lombard, Emilian, and Romagnol are different *Abstand* languages, like ISO, Ethnologue, Glottolog and UNESCO documents²¹ indicate (henceforth *UNESCO languages*),²² or rather geographical varieties of the same *Abstand* language²³ (see also Section 6.2.1.1). With a view to a possible maintenance policy for the Gallo-"Italic" UNESCO languages—all of which are endangered, according to the

²¹ See the UNESCO Atlas of the World's Languages in Danger: <u>http://www.unesco.org/languages-atlas/index.php</u>.

²² Recall, UNESCO lists Piedmontese, Lombard, Emilian and Romagnol languages as separate endangered languages with the following respective ISO codes: pms, lmo, egl, rgn.

²³ In further work in preparation, I will shortly propose some considerations that should weigh in favour of interpreting all the current inter-Gallo-"Italic" intelligibility scores—even including the lowest one, i.e. the Lombard participants' score on Piedmontese—as showing all the Gallo-"Italic" geolects currently studied as (definable as) varieties of a single *Abstand* language.

UNESCO Atlas of the World's Languages in Danger (Moseley 2010)—this in turn raises the (difficult) question about what path would be—all other conditions being equal—most suitable to follow in order to grant the most effective maintenance of linguistic diversity: whether assuming the UNESCO view, i.e. splitting the Gallo-"Italic" continuum into the four²⁴ UNESCO languages, which would then be the targets of an independent policy each, or considering Gallo-"Italic" as one language, this being as such the target of one single policy. The high levels of *inter-regional* mutual intelligibility observed in the current empirical study, and the smooth nature of the Gallo-"Italic" continuum described by previous literature, would indeed suggest that each local geolect could effectively be used orally "in high domains, where [usually] the *Ausbau* variety is required for communicative functionality" (Tamburelli, 2021a: 36) even *at an inter-regional level*, at least in a wide part of the Po valley surrounding that given geolect. This in turn would help each geolect resist abandonment, beyond that which the possible language policy of each individual region can do. To properly answer this question, what was pointed out in Tamburelli (2021a) about the advantages and the disadvantages of either path should be considered, as illustrated in the following quotations (1.) and (2.):

- "...undersplitting of languages (i.e. recognising as few languages as possible) [in a continuum]... is detrimental to the maintenance of linguistic diversity. [On the contrary t]he fact that [Czech and Slovak] are considered separate languages through *Ausbau* and/or self-perception *despite* being highly intelligible is only minimally detrimental to their speakers, if at all. [Indeed, eight out of nine] major evaluative factors of language vitality laid out by UNESCO (2003)²⁵... are likely to be met to high standards [factors 4, 5, 6, 7, and 9]... [or] to a reasonable standard [factors 1, 3, and 8]."
- "The only factor that is obviously likely to suffer is factor 2 [i.e. 'Absolute number of speakers'], as the absolute number of Czech speakers is by definition lower than the potential number of a hypothetical Czech-Slovak *Ausbau*-Language." (Tamburelli, 2021a: 35-36).

²⁴ I am not counting the Ligurian language here, which is traditionally (predominantly) considered part of Gallo-"Italic" but was not investigated in the current empirical study. Also Ligurian language is listed by UNESCO among the endangered languages, with the ISO code lij.

²⁵ Here are the nine major evaluative factors of language vitality laid out by UNESCO (2003): 1 – Intergenerational Language Transmission; 2 – Absolute Number of Speakers; 3 – Proportion of Speakers within the Total Population; 4 – Trends in Existing Language Domains; 5 – Response to New Domains and Media; 6 – Materials for Language Education and Literacy; 7 – Governmental and Institutional Language Attitudes and Policies Including Official Status and Use; 8 – Community Members' Attitudes towards their Own Language; 9 – Amount and Quality of Documentation.

In order to try to enjoy the advantages—presented in quotation (1.)—of splitting the Gallo-"Italic" continuum into different languages, avoiding at the same time the disadvantage presented in quotation (2.), future research should consider proposing and experimenting with what I would define as a 'confederative linguistic strategy'. On the one hand, this strategy would consider Piedmontese, Lombard, Emilian, and Romagnol²⁶ as distinct languages (in line with UNESCO), which would be targeted as such by an ideally independent²⁷ language policy each. On the other hand, it would encourage the speakers of each language to adopt and use a slightly localized (i.e. regionalized) version of a new polynomic orthographic system, purposely devised for Gallo-"Italic",²⁸ besides the possible traditional regional writing system(s). Such polynomic orthography would help language maintenance in a two-fold way: on the one hand, it would express some of the peculiarities of each 'confederate language', granting in this way the clear identification of the regional origin of each written text, hence the respect of each possible 'confederate language' activists' identity perception; on the other hand, it would even further enhance the mutual intelligibility—which is definitely high orally, as we have seen in results sections—in the written texts across all the 'confederate languages', exploiting the demographic strength of Gallo-"Italic" community as a whole. Besides the desirable dissemination of the inter-Gallo-"Italic" "nonconvergent discourse", namely conversation across regions making recourse to each speaker's geolect (for details on the concept of non-convergent discourse, see Gooskens 2013),²⁹ sharing such polynomic/logographic orthography would multiply the number of *readers* for each 'confederate language' (see UNESCO vitality criterion 9 above 'Absolute number of speakers'), and consequently multiply its economic value and the social functionality of its speakers even in supra-regional public/official contexts. One should note here that taking such a 'confederative' approach would not require any previous and dramatically definitive choice on whether the varieties at issue are distinct—yet very similar—*Abstand* languages (regionalist view) or varieties of one *Abstand* language (macro-regionalist view). This could reveal itself to be a pragmatic and

²⁶ Again, I do not mention Ligurian here (predominantly considered Gallo-"Italic" in the literature) since I did not collect intelligibility data about Ligurian for the current empirical study.

²⁷ By definition, a 'confederative' approach would decide from time to time and in a never definitive way how great this independence should be.

²⁸ One possible starting point is the polynomic orthography *Scriver Lombard*, already used in order to partially standardize the written forms of all the geolects of the Lombard language.

²⁹ Other terms used are receptive multilingualism, semibilingualism, semicommunication, asymmetric/bilingual discourse (see Gooskens 2013).
quick way to start helping language diversity in cases where this question is likely to be debated for a long time, but where speakers feel and recognize that their regional identity is reconcilable with—because it is included within—a larger macro-regional identity. My personal anecdotal experience suggests that this (regional and macro-regional) identity feeling is common at least in the Po valley, in line with the results of the current empirical intelligibility study. While there are several studies on polynomic standardization of languages (e.g. Marcellesi, 1984, 1990; Jaffe, 2021), I do not know any scholarly proposal of a similar 'confederation of languages', each of which is possibly standardized in a polynomic way.

APPENDICES

Appendix 1a – Participant Consent Form in Italian	352
Appendix 1b – Participant Consent Form in French	353
Appendix 2a – Questionnaire for the Piedmontese-3 participants	354
Appendix 2b – Questionnaire for the Occitan-1 participants	358
Appendix 3a – Answer sheet in Italian	362
Appendix 3b – Answer sheet in French	364
Appendix 4 – Sentence meanings and their Lombard translations	366

BANGOL UNIVERSITY
Bangor University's 'Code of Practice for the Assurance of Academic Quality and Standards of Research Programmes' (Code 03) <u>https://www.bangor.ac.uk/ar/main/regulations/home.htm</u>
COLLEGE OF ARTS & HUMANITIES
Modulo di consenso informato
Nome del ricercatore:
Il sottoscritto, acquisite oralmente le informazioni di cui all'art. 13 de D.lgs 196/2003, conferisce al ricercatore di cui sopra il proprio consenso al trattamento in forma anonima dei dati raccolti e all'eventuale resa pubblica degli stessi in un contesto accademico e per fini di ricerca.
Il sottoscritto dichiara di essere stato informato circa la procedura della presente ricerca e di essere al corrente del suo diritto a ritirarsi dalla ricerca in ogni momento dichiarando di volere interrompere la procedura, senza l'obbligo di fornire alcuna giustificazione a ricercatore.
Firma del partecipante
Data
Il presente modulo verrà compilato in duplice copia, di cui una rimane all'utente e l'altra al ricercatore.

1. 1. 1 \mathbf{T} APP

¹ This Participant Consent Form and the one in French (see Appendix 1b) are equivalent to the template given by the College of Arts, Humanities and Business of Bangor University and which can be found here: <u>https://www.bangor.ac.uk/arts-humanities-and-business/ethics</u>.

APPENDIX 1B – Participant Consent Form in French

PRIFYSGOL BANGOR UNIVERSITY
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COLLEGE OF ARTS & HUMANITIES
Formulaire de Consentement du Participant
Nom du chercheur:
Le chercheur nommé ci-dessus m'a informé de façon satisfaisante sur la recherche à laquelle je participe volontairement. Je suis conscient d'avoir le droit d'interrompre ma participation à cette recherche en tout moment. Je suis également conscient que mes droits à l'anonymat et à la confidentialité seront respectés.
Signature du participant
Date
Ce formulaire sera produit en double exemplaire. Un exemplaire est réservé au participant et l'autre au chercheur.



APPENDIX 2A – *Questionnaire for the Piedmontese-3 participants*

Q5. Indichi con una croce quante volte è stato/a nelle seguenti zone:

	Mai / Raramente	Qualche volta	Spesso	Molto spesso
a. Appennino umbro				
b. Alpi piemontesi				
c. Alpi grigionesi (CH)				
d. Regione Puglia				
e. Appennino emiliano				
f. Pianura lombarda				

Q6. Indichi con una croce con che regolarità frequenta o ha frequentato persone che parlano/parlavano i seguenti dialetti in Sua presenza:

	Mai / Raramente	Qualche volta	Spesso	Molto spesso
a. Umbri				
b. Occitani (Piem.)				
c. Romanci (CH)				
d. Pugliesi				
e. Emiliani				
f. Lombardi				

pagina 2/4

	1. Per niente	2.	3.	4.	5. Moltissimo
a. Appennino umbro					
b. Alpi piemontesi					
c. Alpi grigionesi (CH)					
d. Regione Puglia					
e. Appennino emiliano					
f. Pianura lombarda					

Q7. Indichi su questa scala da 1 a 5 quanto Le piacerebbe abitare in una delle seguenti zone:

Q8. Indichi su questa scala da 1 a 5 cosa pensa dei seguenti dialetti:

	1. Orribili	2.	3.	4.	5. Bellissimi
a. Umbri					
b. Occitani (Piem.)					
c. Romanci (CH)					
d. Pugliesi					
e. Emiliani					
f. Lombardi					

pagina 3/4

Q9. Esprima il Suo grado d'accordo con le seguenti affermazioni seguendo la scala indicata, barrando con una X il numero scelto:

Del tutto in	Abbastanza in	Né d'accordo né	Abbastanza	Del tutto
disaccordo	disaccordo	in disaccordo	d'accordo	d'accordo
1	2	3	4	5

a. Mi piacerebbe saper parlare un dialetto umbro.	1	2	3	4	5
b. Mi piacerebbe saper parlare un dialetto occitano (Piem.).	1	2	3	4	5
c. Mi piacerebbe saper parlare un dialetto romancio (CH).	1	2	3	4	5
d. Mi piacerebbe saper parlare un dialetto pugliese.	1	2	3	4	5
e. Mi piacerebbe saper parlare un dialetto emiliano.	1	2	3	4	5
f. Mi piacerebbe saper parlare un dialetto lombardo.	1	2	3	4	5

Q10. DATI ANAGRAFICI

Età: _____ Sesso: M / F

Regione e provincia di provenienza:_____

GRAZIE PER LA COLLABORAZIONE!

pagina 4/4

PRIFYSGOL BANGOR UNIVERSITY	Université de Bangor (Royaume-Uni)
Nous vous sommes a concernant vos pra Département de Ling Pour la pertinence et aussi précises que po	reconnaissants d'avoir accepté de répondre aux questions suivant atiques linguistiques, dans le cadre d'une enquête menée par guistique de l'Université de Bangor, au Pays de Galles (Royaume-Uni t le succès de l'enquête, nous vous remercions d'apporter des réponse pssible. Nous vous remercions pour votre participation.
Q1. Quelles langues	étrangères connaissez-vous ? (entourez le niveau de compétence po
1	nnee)
2.	mireau : école – élémentaire – intermédiaire – avancé
3	
Q2. Quelle connaissar	nce avez-vous du latin ? (entourez le niveau correspondant)
aucune – elen	ientaire – bonne – excellente
Q3. Quels langues/pat	tois/dialectes sont utilisés dans votre famille ? (cochez d'une croix une c
plusiculs options)	
français	
français patois de	ou d'un de ses hameaux (précisez lequel :
français patois de un autre pa	ou d'un de ses hameaux (précisez lequel : tois/dialecte (précisez lequel :
français patois de un autre pa autre (préc	ou d'un de ses hameaux (précisez lequel :
français patois de un autre pa autre (préc Q4. Quels langues/pa	ou d'un de ses hameaux (précisez lequel :
Gamma (contraction of the second of the seco	ou d'un de ses hameaux (précisez lequel :
Gangais patois options) français patois de un autre pa autre (préc Q4. Quels langues/pa votre enfance ? (coche français	ou d'un de ses hameaux (précisez lequel :
<pre>français français patois de un autre pa autre (préc Q4. Quels langues/pa votre enfance ? (coche français patois de un autre pa</pre>	ou d'un de ses hameaux (précisez lequel :
français patois de un autre pa autre (préc Q4. Quels langues/pa votre enfance ? (coche français patois de un autre pa	ou d'un de ses hameaux (précisez lequel :

APPENDIX 2B – Questionnaire for the Occitan-1 participants

	Jamais / Rarement	Quelquefois	Souvent	Très souvent
a. Haute-Savoie				
b. Alpes piémontaises				
c. Côte ligure				
d. Côte corse				
e. Plaine piémontaise				
f. Puy-de-Dôme				

Q5. Combien de fois vous êtes-vous rendu(e) dans les zones suivantes ? (cochez d'une croix la fréquence)

Q6. Avec quelle régularité fréquentez-vous ou avez-vous fréquenté des personnes parlant ou ayant parlé en votre présence les patois/dialectes suivants ? (cochez d'une croix la fréquence)

	Jamais / Rarement	Quelquefois	Souvent	Très souvent
a. Franco-provençaux				
b. Occitans (Piém.)				
c. Ligures				
d. Corses				
e. Piémontais				
f. Auvergnats				

page 2/4

	1. Pas du tout	2.	3.	4.	5. Beaucoup
a. Haute-Savoie					
b. Alpes piémontaises					
c. Côte ligure					
d. Côte corse					
e. Plaine piémontaise					
f. Puy-de-Dôme					

Q7. Aimeriez-vous habiter dans l'une des zones suivantes ? (notez selon l'échelle de 1 à 5)

Q8. Comment qualifiez-vous les dialectes/patois suivants ? (notez selon l'échelle de 1 à 5)

	1. Horribles	2.	3.	4.	5. Très beaux
a. Franco-provençaux					
b. Occitans (Piém.)					
c. Ligures					
d. Corses					
e. Piémontais					
f. Auvergnats					

page 3/4

Q9. Indiquez votre degré d'accord avec les énoncés suivants selon l'échelle proposée (cochez d'une croix le chiffre choisi).

Complètement	Plutôt en	Ni d'accord ni	Plutôt d'accord	Complètement
en désaccord	désaccord	en désaccord		d'accord
1	2	3	4	5

a. J'aimerais savoir parler une variété franco-provençale.	1	2	3	4	5
b. J'aimerais savoir parler une variété occitane (Piém.).	1	2	3	4	5
c. J'aimerais savoir parler une variété ligure.	1	2	3	4	5
d. J'aimerais savoir parler une variété corse.	1	2	3	4	5
e. J'aimerais savoir parler une variété piémontaise.	1	2	3	4	5
f. J'aimerais savoir parler une variété auvergnate.	1	2	3	4	5

Q10. DONNÉES PERSONNELLES

Âge : _____ Sexe : H / F

Région et province d'origine : _____

NOUS VOUS REMERCIONS DE VOTRE COLLABORATION !

page 4/4

APPENDIX 3A – Answer sheet in Italian





APPENDIX 3B – Answer sheet in French





Sentence meanings (Kalikow et al. 1977)	Lombard translations (in IPA)
I cut my finger with a knife.	ma sun taja(da) ² l 'did kunt un kur'tɛl
The candle flame melted the wax.	la 'fjama da la kan'dila l a dezlen'gwa la 'sila
The baby slept in his crib.	al fju'lin al dur'miva indala sua 'kyna
How long can you hold your breath?	per kwantu 'temp ta 'rjɛset a tegni l 'fja:
Stir your coffee with a spoon.	ryga l tə ka'fɛ kunt uŋ ky'dʒa:
Old metal cans were made with tin.	i 'vɛdʒ tulɛt da me'tal eren fa da 'staŋ
The beer drinkers raised their mugs.	i bevidur da 'bira tiren 'sy i sɔ bi't∫e:r
Hold the baby on your lap.	'tɛɲ al fjulin in 'skəs
The workers are digging a ditch.	i lau'rant in a'dre a skava un 'by:z
Spread some butter on your bread.	'mɛt un pɔ da by'ter in syl tɔ 'pa:ŋ
The plow was pulled by an ox.	la si'lorja l era tirada di 'bø
The shepherd watched his flock of sheep.	al pegu'rat al ky'rava l sɔ rɔ∫ da 'bε
The judge is sitting on the bench.	al 'dʒydez l ε se'ta in sy la 'baŋka
The cut on his knee formed a scab.	al 'taj in syl so dʒe'nødʒ l a fa 'sy la 'krusta
The farmer baled the hay.	al pai'zan l a muntu'na l 'fe:ŋ
She wore a feather in her cap.	la pur'tava una 'pjyma in syl ka'pɛl
At breakfast he drank some juice.	a kula'sjun l a be'y un t∫i't∫in da 'lat∫
Raise the flag up the pole.	tira 'sy la ban'dera in syl 'pa:l
The landlord raised the rent.	al padrun da 'ka l a krɛsy l 'fit∫
Tom fell down and got a bad bruise.	al tu'ma.z l è burla 'dʒu e g ε vɛny 'sy una 'ɲɔla
The chicks followed the mother hen.	i pure'ziŋ g andaven a'dre a la 'pita
A bear has a thick coat of fur.	'l urs al g a un man'tɛl 'ɛrtig da 'pe:l
His boss made him work like a slave.	al so 'kap l a fa lau'ra kumpan d un 'azin
The cigarette smoke filled his lungs.	al 'fym da la siga'rɛta l a impjen'di i sɔ pul'muːŋ
The stale bread was covered with mold.	al pan 'pɔs l era kwata da 'myfa
Our seats were in the second row.	i nos 'post eren in se'kunda 'fila
That accident gave me a scare.	kal int∫ident 'la al m a fa t∫a'pa un 'ku.lp
I've got a cold and a sore throat.	o t∫a'pa l fre'dʒu e l mal da 'gula

APPENDIX 4 – Sentence meanings and their Lombard translations

 $^{^2}$ 'Taja' is the grammatically masculine form that was used by the male speaker; the female speaker used the feminine form 'tajada'.

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