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TEMPORAL CONCORD AND LATIN AMERICAN SPANISH DIALECTS: A GENETIC BLUEPRINT

Sandro Sessarego[1]
The Ohio State University
ESC Bretagne Brest

1. Introduction

Far from stipulating whether or not the violation of *Concordantia Temporum* rule (CT) is grammatical or ungrammatical, Kany (1945; 1987) points out its undeniable presence in Andean Spanish and suggests that such a violation has to be explained as a sign of an on-going simplification process which has already taken place in spoken French. He says that "*such infractions are naturally commoner in speech than in writing and may be heard in the conversation of cultured persons. The process has here a parallel in spoken French, where all the forms of the past subjunctive have been lost*" (1987:181).

Lunn (2007) is of the same opinion, she describes the phenomenon in Andean Spanish as evidence of language change. She claims that [+past … -past] sequence-of-tense is so common in Spanish that it has led speakers to treat it as a redundancy and therefore vulnerable to loss, in fact the temporal reference of the subordinate clause can be determined by that of the main clause (plus context) and, as a result, tense agreement is not necessary.

She argues that elimination of redundancy has been cited in the literature as a source of other changes in the Spanish subjunctive, and backs this claim by providing the example of the future subjunctive, whose functions have been taken over by the present subjunctive and nowadays appears only in legal language or frozen in proverbs such as (1):

(1) Cuando a Roma fueres, haz lo que vieres.
'When you go to Rome, do what you see'

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In an attempt to verify Lunn's hypothesis empirically, I evaluated through a VARBRUL analysis the roles of internal and external factors on the alternation between present and past subjunctive in dependent nominal clauses for the cases in which, according to the *Concordantia Temporum* rule, only the past subjunctive should be allowed in Bolivian and Peruvian Spanish (Sessarego 2008). The results suggested that the appearance of the present subjunctive was much more common in Bolivian (61.1%) than in Peruvian Spanish (23.5%); and in both dialects, lack of concord was favored in the journalistic genre, but highly disfavored in books. Moreover, in both dialects a non-agentive subject in the subordinate clause strongly favored the present subjunctive; world-creating verbs, those verbs that when found in the main clause are said to disallow the present subjunctive in the subordinate clause (Carrasco-Gutiérrez 1999), strongly disfavored the phenomenon in Peruvian Spanish, but had no significant effect in Bolivian Spanish.

From a theoretical perspective, these results support the claim of a simplification of the subjunctive paradigm, as suggested by Kany (1945; 1987) and Lunn (2007); the findings also indicated that agentivity was crucial in explaining the patterns of variation found for this phenomenon.

Even though Sessarego (2008) provided an empirically-verifiable analysis of the conditions favoring and disfavoring the occurrence of the present subjunctive in nominal dependent clauses, for Peruvian and Bolivian Spanish, it still remains to be explained whether the phenomenon is restricted to these two varieties of Andean Spanish or is it also found in other dialects. Moreover, as mentioned above, Peruvian and Bolivian Spanish presented substantial differences in the configuration of the factor weights, this means that the internal rules regulating CT violations differ from dialect to dialect and a description of these grammatical mechanisms in other Spanish varieties is still left to be provided. While these differences can be seen if the tokens are ran one dialect at the time, VARBRUL cannot offer

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a cross dialectal picture showing where each dialect stands contemporarily.

In this paper, I will build on the results obtained in Sessarego (2008) to provide a preliminary analysis of the variation encountered in 20 Spanish dialects. Using Splits Tree 4 (Huson & Bryant 2006), a program created for genetic research now employed also in Linguistics (Bryant, Filimon & Gray 2005; McMahon 2008; Danielsen, Dunn & Muysken 2008), the similarities and differences in the internal rules affecting the variation in the different varieties under examination can be graphically pictured. The program will provide a genetic network of the CT principles in the dialects studied and an idea of the relative "linguistic distance" separating them.

Following Bull (1965), Otero (1974) and Suñer & Padilla-Rivera (1987), I consider that the present, present perfect, future and future perfect verb forms belong to the "present set", represented as [-past], while the imperfect, preterit, past perfect, conditional and conditional perfect are members of the "past set" [+past]. Suñer & Padilla-Rivera (1987) observe that the tense sequence [+ past … - past] is allowed pandialectally, as in the following examples.

(2) El agricultor dijo que era una lástima que aún no se cultive maíz en esa zona.

(3) El médico recomendó que la niña no coma tantos productos lácteos.

The authors affirm that "the sequencing in […] the examples is used to report a past event (expressed by the main verb), which has consequences for other events, which are yet to take place (expressed by the present subjunctive)" (1987:639).

Farley (1970) shows that violations of *Concordantia Temporum* are present in both Latin American and Peninsular Spanish. He provides the following examples to support his position:

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(4) "U. Thant declaró … que *había fracasado* en su intento de convencer a Kruchef de que Rusia *pague* los 52 millones de dólares que adeuda a las Naciones Unidas …" (ABC, Madrid, December 1966, p.71).

(5) "Parece como si esta ciudad *hubiera sido* hecha para que todo *reencuentre* y se *repita*, para que todo olvido *sea* imposible." (Alfonso Sastre, Teatro, Buenos Aires: Editional Losada S. A., 1960, pp.125-126).

Farley admits that, in Latin American dialects, this phenomenon tends to be more common than in Peninsular Spanish. He adds that [+ past … - past], in Latin America, is frequently used to convey [+ past … + past] meanings, so that the meaning distinction between [+ past … - past] and [+past … + past] is no longer valid for several Latin American Spanish varieties. Obaid (1967) notes that "*In present day Latin American Spanish the use of the present subjunctive in the dependent clause, after a main verb in the past, increases as the degree of [knowledge of] the speaker decreases. […] It is constantly heard in the spoken language. […] It is easily found in journalistic writings, given the very wide range of degree of education of the people who write for the press*". He presents the following example:

(6) "Felipe Herrera, Presidente del Banco Interamericano del Desarrollo (BID) *urgió* a lasinstituciones financieras de desarrollo de la América Latina para que *continúen* estimulando el proceso de desarrollo económico y social del continente, … *surgió* la posibilidad de que el Banco Interamericano *actúe* <<como un foro técnico, imparcial y supranacional que *facilite* las posibilidades de un diálogo y de un intercambio permanente entre corporaciones y bancos que están desempeñando en la América Latina una función análoga>> (La Esfera, Caracas, Dec. 3, 1964)".

In certain South American dialects, the use of the present subjunctive, in environments where normative rules require the past form, is strongly entrenched,

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regardless of the speaker's level of education (Lunn & Lunsford 1996). The following example comes from a public speech by Sixto Durán Ballén, the ex-president of Ecuador:

(7) "Ciudadanos, debo decirles que nuestra decisión... fue el hecho que determinó que al cabo de medio siglo Ecuador y Perú *encuentren* un camino que *conduzca* al diálogo y a la negociación."

Even though Concordantia Temporum rules have been shown to be violable even in Latin (Rojo 1976), cases like those presented by Lunn (2007) would be classified as mistakes by prescriptive Spanish grammars, because the concept conveyed in the dependent clause refers to a past action but is expressed by a present tense form.

At this point, it is necessary to point out what makes a violation of *Concordantia Temporum* either unacceptable or acceptable. To understand this, we must first clarify the difference in meaning between the use of a tense sequences [+past … -past] and [+past … +past]. To do that, it is crucial to keep in mind the concept of time of communication (TOC) proposed by Suñer & Padilla-Rivera (1987).

Tense is a semantic construct by which speakers tie the temporal perspective to the reported situation (Comrie 1985). Any correspondence between tense and time is not obligatory in the real world. Speakers report situations from the perspective of the TOC; hence an event may coexist with the TOC, or be anterior or subsequent to it (Reichenbach 1947). Suñer & Padilla-Rivera (1987) provide the following examples to show that both [+past … -past] and [+past … +past] can be possible constructions:

(8) El médico recomendó que la niña no coma tantos productos lácteos

(9) El médico recomendó que la niña no comiera tantos productos lácteos

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In the case of (8), the TOC is crucial because what is being signaled is that the subjunctive marked-action is not just subsequent with respect to the main verb action (expressed by a past verb), but also subsequent to the TOC. Hence, the present subjunctive is used in a meaningful way here, and there is no violation of CT. In the case of (9), instead, *comiera* would still be subsequent to *recomendó*, but it would not necessarily signal that the girl's new diet has not started.

2. Grammaticality and ungrammaticality of *Concordantia Temporum* violations

Previous studies of *Concordantia Temporum* violations have primarily focused on grammaticality and ungrammaticality (Suñer & Padilla-Rivera, 1987; Carrasco-Gutiérrez 2000), these works have mainly been oriented toward determining the semantic conditions that constrain the violation of the rule. In one of these studies, Suñer & Padilla-Rivera (1987) show that from the range of possible subjunctive clauses listed in A, only a subset of those described in (A.c.ii) display strict dependencies between matrix and embedded predicates.

(A) Suñer & Padilla-Rivera (1987)
a. adjunct (adverbial) clauses
b. relative (adjectival) clauses
c. nominal (subcategorized) clauses
i. subjunctive possible only with some operator-like element[2]
ii. subjunctive required irrespective of the presence of an operator.

The authors proceed by analyzing clause-types following the order exhibited in (A).

A.a Adjunct (adverbial) clauses.
They are introduced by relators such as *'a menos que'*, *'a fin de que'*, *'aunque'*, etc.

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(11) Prometió una reforma tributaria a fin de que las contribuciones al Fisco sean equitativas (Obaid 1967:113).

A.b Relative (adjectival) clauses.
Subjunctive mood is used whenever the head of the relative clause is either negated, unknown or non-specific.

(12) ... se había aprobado por unanimidad el boycot contra los paises que comercien con Cuba (Obaid 1967:113).

A.c Nominal clauses.
A.c.i Subjunctive mood allowed by the employment of an operator-like element.
An operator-like element (negation, interrogation, etc.) the sentence makes it possible to employ the subjunctive mood in the subordinate clause. The subjunctive clause can be either [+past] or [-past], if the matrix verb is in the present or future, but only [+past] is allowed when the main verb is in the past form. This highlights the fact that [+past ... –past] sequence depends on semantic/pragmatic constraints imposed by the matrix verb, such as the impossibility of believing or not believing in the past something that will take place in the future.

(13) Los jueces no creen que sea un error

(14) *Los jueces no creían que sea un error

A.c.ii Subjunctive mood allowed without the employment of an operator-like element.
This is a class of nominal clauses which are subcategorized by the main verb without the requirement of external operator-like elements. The authors separate verbs into semantic classes, which display different properties in terms of [+/- past] agreement. The verb classes taken into consideration are the following: denial, factive-emotive, uncertainty, influence, desire, and lack of knowledge. Suñer & Padilla-Rivera (1987)

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point out the existence of a verb scale, where denial factive and emotive verbs are those that put fewer constraints on the dependent clause verb, in fact, all combinations of tense sequences are allowed:

(15) Niego/Negué rotundamente que sostenga/haya sostenido/ sostuviera/ hubiera sostenido vínculos con el Partido Nazi.

Verbs of uncertainty such as *dudar* allow all combinations but [+past ... – past]:

(16) Dudaba que estuvieran/*estén enfermos

Verbs of influence such as *ordenar, demandar,* etc. allow all sequences but [-past ...+past]; this restriction is due to the fact that the meaning of such verbs carries a lexical feature [+ subsequent] so that the dependent clause verb must describe an action taking place after the one described by the matrix RAE (1974):

(17)...exortó a los visitantes a que aquilaten los productos... (Obaid 1967: 114).

Desire verbs, on the other hand, tend to put stricter constrains on the tense sequences, and [+past … –past] is not usually allowed:

(18) Prefirió que llegaras/ *llegues a las 4.

However, in order to support the thesis that no mechanical role is capable to account for [+ past ... –past] sequence, but it is rather a matter of semantics applied to different pragmatic contexts, the authors provide an example with the desire verb *querer* where both the past subjunctive (*quisiéramos*) and the conditional (*querríamos*) convey politeness and are employed with [+past ... - past] sequence:

(19) No quisiéramos/querríamos que se case con un

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extranjero y se vaya a vivir lejos de nosotros (Solé & Solé1970:163).

The class of verbs expressing lack of knowledge takes a *que*-subjunctive clause only if the matrix verb is in the past tense, furthermore, a [+past ... -past] sequence is not allowed.

(20) Ignoraba que estuviera/*esté en lista.

A similar attempt to identify conditions permitting the violation of *Concordantia Temporum* in nominal clauses is proposed by Carrasco-Gutiérrez (1999). She claims that, in order to license [-past] tense in subordinate nominal clauses, the main verb must not belong to the class of verbs called 'verbs of creation' (*esperar, desear, figurarse, imaginar, pensar, suponer, soñar*, etc): "*con estos verbos en la oración principal, el contenido de la oración subordinada se refiere siempre al mundo de las creencias, deseos, suposiciones, etc. del sujeto de la oración principal. El hablante tiene que limitarse a reproducir estas creencias, deseos o suposiciones, etc. tomando como tiempo de evaluación el del evento de la oración principal. Por consiguiente, el momento del habla no es nunca eje de la deixis temporal*" (3091).

These attempts to place constraints on the grammaticality of *Concordantia Temporum* violations are difficult to reconcile with some of the data extracted from CREA.

Compare (18) and (19) with (21) and (22).

(21) A principios de semana, el presidente Bizimungu *deseó* que *se replantee* el principio de intangibilidad. (CREA: Venezuela, tkn 1151).

(22)… *deseó* que los creyentes *tengan* la visión para descubrir esos avisos y no "seamos habitantes de esas ciudades que recibieron el reproche de Jesús por no haber reconocido los numerosos signos que el salvador hizo ante ellos". (CREA: Mexico, tkn 1255).

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Working with CREA, it is easy to get across present subjunctive forms that follow verbs which, according to Suñer & Padilla-Rivera (1987) and Carrasco-Gutiérrez (1999), do not allow their realization. Some of the verbs listed as those that do not allow the [+past] [-past] sequence, actually can be found in the matrix followed by a present subjunctive in the dependent clause, which expresses a future or a general action.

This becomes evident if we focus on examples (21) and (22).

In (21) we can interpret the sentence as a desire expressed in the past about an action that will hopefully become real next Saturday: We could therefore re-formulate it as:

(21b) A principios de semana, el presidente Bizimungu *expresó su deseo de que* se replantee el principio de intangibilidad *(en un próximo futuro).* (CREA: Venezuela, tkn 1151).

For the same reason (22) can be expressed as (22b):

(22b)… *expresó su deseo de que* los creyentes *tengan (siempre-ahora-en general)* la visión para descubrir esos avisos y no "seamos habitantes de esas ciudades que recibieron el reproche de Jesús por no haber reconocido los numerosos signos que el salvador hizo ante ellos". (CREA: Mexico, tkn 1255).

Besides these examples that show how difficult it can be to find norms able to provide precise generalizations for all verbal constructions; in many cases, as shown in Sessarego (2008), even those rules that seem to be perfectly logical and impossible to be violated, when confronted with empirical data, become more vulnerable to critics.

Even if we agree on the semantic difference imposed by the TOC between (8) and (9), we cannot explain with the Time of Communication paradigm sentences like (23).

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(23) Bustamante y Mosqueira no *lograron* que en el documento de la OEA del *martes 11*, en la parte correspondiente a los objetivos por cumplir, *se elimine* el tema del control civil sobre el SIN y las Fuerzas Armadas.

Además figuran en el comunicado de la OEA la reforma de la administración de justicia, la separación de poderes, la protección a los derechos humanos, las garantías a la libertad de expresión y la reforma electoral.

De acuerdo con información oficial dominicana, Latorre llegaría a Lima el *lunes 17*. Se trataría de una primera aproximación, puesto que tiene funciones de gobierno que cumplir hasta mediados de agosto, cuando el presidente de República Dominicana, Leonel Fernández, cuyo gabinete integra el canciller desde 1996, deje el poder.

Extracted from Caretas, *13/07/2000*: El Fiscal Enviado. (CREA: Peru, tkn 1224).

As can be observed, on Thursday, July 13, 2000, Time of the Communication, the journalist who wrote the article "El Fiscal Enviado" in the newspaper "Caretas", described an action that took place in the past, on Tuesday, July 11th, 2000, by employing a present subjunctive "*se elimine*" rather than a past form *"se eliminara-se eliminase"*. This case, not only represents a violation of CT, it also implies a violation of what we assumed to be the logical principles imposed by the TOC.

It is at this point when we realize that speakers must interpret, consciously or not, the grammar of their language in a different way from the one we expected it to be.

The present work attempts to provide an account able to picture the CT variation encountered in the CREA corpus. The main objective of this study is not to find a final explanation of how CT works in the 20 dialects under analysis; rather, it wants to show an example of how distinct computer tools created for different purposes can be combined to describe language variation.

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3. Data and method

For the purpose of this study I decided not to limit the VARBRUL analysis to only Peruvian and Bolivian Spanish, I departed from the results obtained for these varieties in Sessarego (2008) to study the same phenomenon in the rest of the Spanish dialects enlisted in CREA. The dialects present in the database are twenty-two, I could only extract tokens only for twenty, the Latin American ones, no relevant data were found for Filipino Spanish while for Peninsular Spanish the variation was too low. The total number of tokens extracted was 2140: Argentinean (479), Mexican (268), Colombian (179), US-American (185), Paraguayan (47), Venezuelan (107), Salvadorian (103), Bolivian (100), Uruguayan (124), Peruvian (76), Puerto Rican (17), Guatemalan (69), Chilean (69), Ecuadorian (59), Costa Rican (55), Panamanian (52), Nicaraguan (51), Dominican (41), Cuban (31), and Honduran (28).

As it can be inferred by looking at the numbers reported, the study does not claim sure results for all the 20 dialects analyzed. CREA present huge differences of data according to the varieties taken in consideration; if on one hand many tokens can be found for dialects such as Argentinean and Mexican, on the other hand, the material available for varieties such as Cuban and Honduran is reduced, and in some cases non-existent, e.g. Filipino.

It is for this reason that the present work must be taken as a preliminary analysis which does not pretend to explain how CT works in all the dialects analyzed. It rather wants to provide an example of how to combine different tools for language description purposes.

In order to overcome some of the limitations of VARBRUL and to obtain a more comprehensive vision of the linguistic divergence among the dialects and their internal rules regulating CT, the data obtained by employing this statistical tool, have subsequently been transformed into a binary code, readable by Splits Tree 4 (Huson & Bryant 2006), a program created for studying Bimolecular Genetics, now employed also in Contact Linguistics (Bryant, Filimon & Gray 2005).

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According to the results of Sessarego (2008), the appearance of the present subjunctive in both Bolivian and Peruvian was favored in the journalistic genre (factor weight .84), but highly disfavored in books (factor weight .26) and also a non-agentive subject in the subordinate clause strongly favored the phenomenon (factor weight .78). On the other hand, world-creating verbs, those verbs that when found in the main clause are said to disallow the present subjunctive in the subordinate clause (Carrasco-Gutiérrez 1999), strongly disfavored the phenomenon in Peruvian Spanish (factor weight .30), but had no significant effect in Bolivian Spanish (factor weight .51).

Tokens extracted from books presented far more reduced variation, only 3 out of 515 had a [+past – past] sequence in my previous study. For this reason in this new work, I did not code for them and I limited the study to data encountered in newspapers. Moreover, as the tense factor did not result significant in neither dialect, I searched only for simple past forms in the matrix. Another constraint I employed in my study concerned the syntax of my search. It consisted in a [past participle verb form + que] (e.g. [qiso que…]). The number of possible outputs resulting by applying such structure was significantly reduced, in fact, cases such as (24) or (25) encountered in Sessarego (2008) could neither be found nor selected, as their syntax did not match with the one I used.

(24) Le adaptó un parlante mayor porque quería que suene más fuerte (CREA: Bolivia, tkn 135). [*imperfect preterit verb form + que …*]

(25) Así, ordenó a su criado que les sirviera el fricasé (CREA: Peru tkn 54) [*past participle verb form + other linguistic material + que …*]

By doing this, I obtained a standardize way of looking for tokens, which if on one hand limited the possibilities of the analysis, on the other hand, helped me build a methodological way to study CT across the 20 dialects taken into examination.

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Note that the structure of CREA does not allow the study of a particular variety of these dialects, which are defined at the country level (as opposed to city or regional variety). For this reason the study should be considered an analysis of 20 general dialects of Spanish, rather than a study concerning a specific variety spoken in particular areas or urban zones of Spanish speaking countries.

In order to determine the envelope of variation, I contrasted the realization of [-past] subjunctive verbs versus [+past] subjunctive cases in nominative clauses in which the context of the sentences was clearly indicating that the meaning conveyed was referring to a past action, as in example (26).

(26) El juez Jorge Bogarín no permitió que pablo vera Esteche declare en sede judicial, solo ordenó la lecturade las manifestaciones que el asesino confeso realizó ante la policía. (CREA: Paraguay tkn 687).

Note that in (26) the context makes us understand that Pablo Vera Esteche's declaration is a past action that was not allowed by the judge, who considered the reading as evidence of guiltiness more suitable.

Therefore, the constraints posed by the TOC have been violated by the presence of the present subjunctive '*declare'*.

On the other hand, temporally ambiguous sentences, in which the TOC could not be identified due to a lack of context, were excluded:

(27) Los campesinos *pidieron que* el proyecto de ley reponga el principio de que "la tierra es de quien la trabaja".

Here it is not possible to verify whether or not the project had already begun at the TOC, for this reason tokens like (27) were not taken into account.

The first run of my data took into consideration of all the 20 dialects selected. The results are presented in Table1.

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Table 1. Variable rule analysis of the contribution of internal and external factors to the probability of present subjunctive appearance in the nominal dependent clause 20 Spanish dialects (Total N = 2140; Total Chi-square = 85.0107; Chi-square/cell = 1.0626; Log likelihood = -994.021; Significance = 0.000; Input 0.237)

	Weight	% PresSubj	N	% Data
DIALECT				
Bolivian	.89	.70	100	4.7
Paraguayan	.86	.68	47	2.2
Ecuadorian	.72	.42	59	2.8
Uruguayan	.65	.40	124	5.8
Peruvian	.61	.39	76	3.6
Costa Rican	.60	.38	55	2.6
Honduran	.53	.36	28	0.7
Argentinean	.53	.30	479	11.9
Chilean	.46	.26	69	3.2
Dominican	.46	.25	41	1.9
Mexican	.43	.24	268	12.5
Colombian	.42	.23	179	8.4
Nicaraguan	.41	.22	51	2.4
Panamanian	.40	.20	52	2.4
Venezuelan	.37	.18	107	5.0
US-American	.34	.18	185	8.6
Salvadorian	.32	.16	103	4.8
Cuban	.30	.13	31	1.4
Guatemalan	.29	.13	69	3.2
Puerto Rican	.24	.12	17	0.8

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	Weight	% PresSubj	N	% Data
	Range			
	65			
VERB CLASS				
Other	.71	45	105	49.2
Creator Verbs	.30	15	108	50.8
	Range			
	41			
AGENTIVITY				
Non-agent	.73	50	686	32.1
Agent	.38	20	145	67.9
	Range			
	35			

The Dialect factor group was chosen in order to distinguish between the 20 varieties encountered in CREA, it resulted to be the most significant one, indicating that the percentage of sequences [+past … - past] has a highly variable distribution from dialect to dialect. The weight of this factor tells us how likely a dialect is to violate CT but does not inform us at all on the internal rules that regulate such internal distribution.

To obtain information about the linguistic mechanisms that regulate CT, we must turn our attention to the factor groups Verb Class and Dependent Clause Subject Agentivity. Verb Class was chosen on the basis of its importance in the literature (Suñer & Padilla-Rivera 1987; Carrasco-Gutiérrez 1999; 2000). In Sessarego (2008)[3] it resulted to be significant only for Peruvian Spanish, not Bolivian, possibly suggesting that the phenomenon was at two different levels in these Andean dialects.

Within this factor group, I contrasted creator verbs (*creer, pensar, opinar, imaginar, esperar desear querer,*

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temer) (Carrasco-Gutiérrez 2000) vs. other verbs (*pedir, rogar, sugerir, recomendar, aconsejar, decir, solicitar, demandar, ordenar, mandar, proponer*). Note that, in order to obtain comparable numbers of tokens for both classes, I collapsed creator verbs and achievement-permission verbs (*lograr, conseguir, hacer que, permitir, impedir, dejar*). Achievement-permission verbs are those verbs that, according to standard norms, behave similarly to creator verbs, in that they cannot be followed by nominal clauses expressing a future action but rather only a past or general one.

(28) El Obispo logró que los cristianos rezaran/ recen (en general) /*recen mañana.

The last factor taken into account was Dependent Clause Subject Agentivity, already found significant for both Bolivian and Peruvian Spanish in Sessarego (2008). The two sub-categories contrasted are Agent Subjects vs. Non-Agent Subjects.

Note that non-agent subjects cannot perform any action either because they are inanimate (29), generic (30), or the clause is passive (31).

(29) quienes con su apoyo periodístico permitieron que su difusión logre las metas (CREA: Peru, tkn 1459).

(30) debido a las numerosas normas de control que [...] impidieron que se destrabe la venta del producto. (CREA: Argentina, tkn 1407).

(31) Una nueva metodología en el trabajo que permitió que las cosas sean resueltas (CREA:Bolivia, tkn 1498).

Based on these results, we can only say that the phenomenon seems to be more common in some dialects (e.g. Bolivian, Paraguayan, Ecuadorian, Peruvian, etc.) than in others (e.g. Salvadorian, Cuban, Puerto Rican, Guatemalan, etc.), and that Verb Class and Agentivity are significant factors cross dialectally.

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By looking at Table 1 we cannot see the internal differences of each dialect. However in (Sessarego 2008), it could be observed that distinct factors were regulating CT in Peruvian and Bolivia. We know for example that while Verb Class was a significant factor group in Peruvian, it was not so in Bolivian. In order to verify whether or not the results of this new study coincide with those of Sessarego (2008), I re-ran the new tokens with exactly the same factor groups I used before. The results are shown in Table 2 for Bolivian and Table 3 for Peruvian.

Table 2. Variable rule analysis of the contribution of internal factors to the probability of present subjunctive appearance in the nominal dependent clause for Bolivian Spanish (Total N = 100; Total Chi-square = 6.7601; Chi-square/cell = 1.6900; Log likelihood = -57.369; Significance = 0.008; Input 0.716)

	Weight	% PresSubj	N	% Data
AGENTIVITY				
Non-Agent	.66	.83	47	47.0
Agent	.36	.58	53	53.0
	Range			
	30			
VERB CLASS				
Creator Verbs	[0.48]	.68	56	56.0
Other	[0.52]	.73	44	44.0

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Table 3. Variable rule analysis of the contribution of internal factors to the probability of present subjunctive appearance in the nominal dependent clause for Peruvian Spanish (Total N = 76; Total Chi-square = 1.8910; Chi-square/cell = 0.4727; Log likelihood = -38.506; Significance = 0.007; Input 0.356).

	Weight	% PresSubj	N	% Data
AGENTIVITY				
Non-Agent	.77	.65	34	44.7
Agent	.28	.19	42	55.3
	Range			
	49			
VERB CLASS				
Creator Verbs	.69	.57	37	48.7
Other	.32	.23	39	51.3
	Range			
	37			

As in the previous work, Dependent Clause Subject Agentivity resulted to be significant for both dialects while Verb Class was only significant for Peruvian. The significance of Dependent Clause Subject Agentivity can be explained on the assumption that, since non-agentive subjects cannot perform any action, the tense of the verb in the nominal clause is more likely to follow the temporal reference established by the main verb and therefore there is less need to mark the tense of the action with a past subjunctive verb. This backs Lunn's (2007) simplification hypothesis. In fact she claims that [+past -past] sequence-of-tense led speakers to treat it as a redundancy as the temporal reference of the subordinate clause can be determined by that of the main clause (plus context) and, as a result, tense agreement is not necessary.

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The factor group differences between Bolivian and Peruvian are enough to make us understand that, even though the probability of finding lack of concord in the two dialects is relatively similar (Bolivian: factor weight .89; Peruvian: factor weight .86), if compared with others (Puerto Rican: factor weight: .24; Guatemalan: factor weight .29), the rules that regulate CT differ.

A unique VARBRUL analysis cannot show these mechanisms. The only way to extract such information is to run an analysis for every single dialect and then to compare the results. This method however does not offer a comprehensive, global picture of the cross dialectal CT violation.

To overcome this problem, after running 20 different VARBRUL analyses, one for each dialect, I translated the results obtained into a binary code, readable by Splits Tree 4 (Huson & Bryant 2006).

4. Splits Tree 4 Analysis

Splits Tree 4 is a leading application for computing evolutionary networks from molecular sequence data. Given an alignment of sequences, a distance matrix or a set of trees, the program will compute a phylogenetic tree or network. This can be done by employing several methods such as split decomposition, neighbor-net, consensus network, super networks methods or methods for computing hybridization or simple recombination networks (Huson & Bryant 2006). For the purpose of this paper I employed split decomposition, because it is more suitable with small sets of data (Bandelt and Dress 1992; Huson 1998).

This program, initially created for genetic purposes, has recently found application in several fields of Linguistics such as Contact Linguistics (Danielsen, Dunn & Muysken 2008), Dialectology (McMahon 2008) and Comparative Lexicology (Bryant, Filimon & Gray 2005) among others. The software has been employed here for the first time to analyze the configuration of weights affecting Spanish CT from a cross dialectal

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perspective.

The program applies mathematical algorithms to binary-coded data. In this case, data consisted of the VARBRULE analyses results.

The results of these mathematical operations, whose details can be found in (Bryant, Filimon & Gray 2005), are a distance matrix of the data. The distance matrix provides a numerical representation of how the dialects diverge from each other on a specific phenomenon. Distances are utilized to generate a collection of splits which are graphically represented by a network called a *splits graph*.

Taking only the Dialect factor weights into consideration for the Splits Tree 4 analysis, would have given the graphic result of Figure 1, with the respective linguistic distances reported in Table 4. Note that in order to translate the Dialect factor weights into a binary code, I assigned 10 digits to the binary series for the weight and I ordered 1s and 0s according to the factor weight of each dialect. In this way Bolivian (factor weight .89) was recoded as (1111111110), Mexican (factor weight .43) was recoded as (1111000000), Salvadorian (factor weight .32) was recoded as (1110000000), and so forth[4].

Figure 1. Splits graph representing the Dialect factor weight of CT violation in 20 Spanish dialects.

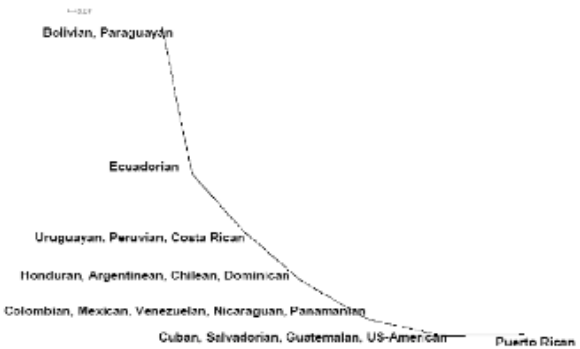

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Table 4. Mean percent difference in dialectal factor weight affecting CT variation. Distance calculated from the VARBRUL results obtained employing Dialect as factor groups across 20 Spanish varieties.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
[1]BOLIVIAN	.00																			
[2]US-AMERICAN	.40	.00																		
[3]MEXICAN	.30	.10	.00																	
[4]VENEZUELAN	.40	.00	.10	.00																
[5]CUBAN	.40	.00	.10	.00	.00															
[6]CHILEAN	.30	.10	.00	.10	.10	.00														
[7]COSTARICAN	.10	.30	.20	.30	.30	.20	.00													
[8]PERUVIAN	.10	.30	.20	.30	.30	.20	.00	.00												
[9]DOMINICAN	.30	.10	.00	.10	.10	.00	.20	.20	.00											
[10]PARAGUAYAN	.00	.40	.30	.40	.40	.30	.10	.10	.30	.00										
[11] HONDURAN	.20	.20	.10	.20	.20	.10	.10	.10	.10	.20	.00									
[12] ARGENTINEAN	.20	.20	.10	.20	.20	.10	.10	.10	.10	.20	.00	.00								
[13]PUERTORICAN	.50	.10	.20	.10	.10	.20	.40	.40	.20	.50	.30	.30	.00							
[14]PANAMANIAN	.40	.00	.10	.00	.00	.10	.30	.30	.10	.40	.20	.20	.10	.00						
[15]SALVADORAN	.40	.00	.10	.00	.00	.10	.30	.30	.10	.40	.20	.20	.10	.00	.00					
[16]ECUADORIAN	.10	.30	.20	.30	.30	.20	.00	.00	.20	.10	.10	.10	.40	.30	.30	.00				
[17]URUGUAYAN	.30	.10	.00	.10	.10	.00	.20	.20	.00	.30	.10	.10	.20	.10	.10	.20	.00			
[18]GUATEMALAN	.40	.00	.10	.00	.00	.10	.30	.30	.10	.40	.20	.20	.10	.00	.00	.30	.10	.00		
[19]COLOMBIAN	.30	.10	.00	.10	.10	.00	.20	.20	.00	.30	.10	.10	.20	.10	.10	.20	.00	.00	.00	
[20]NICARAGUAN	.30	.10	.00	.10	.10	.00	.20	.20	.00	.30	.10	.10	.20	.10	.10	.20	.00	.00	.00	.00

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As can be seen, the distances pictured in Figure 1 and reported in Table 4 coincide with the sequences of Dialect factor weights shown in Table 1, where dialects are represented on the horizontal and vertical positions. By matching the rows with the columns, it is possible to establish the linguistic distance that separates the different varieties.

Something that VARBRUL is not capable of showing is a general comprehensive picture of the internal mechanisms regulating CT in the different dialects. This technical impediment is overcome by Figure 2, where the effects of Dependent Clause Subject Agentivity and Verb Class across the dialects are graphically pictured. Note that I recoded the VARBRUL results into a binary code in which favoring factors are assigned a series of 1, while disfavoring and non-significant factors a series of 0.

According to this way of recoding, the factors affecting the dialect analyzed were introduced in Splits Tree 4 as shown in Table 5. Every factor group was assigned 10 digits making in this way Dependent Clause Subject Agentivity, Verb Class and Dialects comparable.

Table 5. Splits Tree 4 source data for Dependent Clause Subject Agentivity and Verb Class affecting CT across 20 Spanish Dialect.

DIALECTS	AGENTIVITY		VERB CLASS	
	Non-Agent	Agent	Creator Verbs	Other
BOLIVIAN	11111	00000	00000	00000
US-AMERICAN	11111	00000	00000	11111
MEXICAN	11111	00000	00000	11111
VENEZUELAN	11111	00000	00000	11111
CHILEAN	00000	00000	00000	11111
COSTA RICAN	11111	00000	00000	11111
PERUVIAN	11111	00000	00000	11111
DOMINICAN	11111	00000	00000	11111
PARAGUAYAN	11111	00000	00000	00000
HONDURAN	00000	00000	00000	11111
ARGENTINEAN	11111	00000	00000	11111

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PANAMANIAN	11111	00000	00000	11111
SALVADORIAN	11111	00000	00000	11111
ECUADORIAN	00000	00000	00000	11111
URUGUAYAN	00000	00000	00000	11111
GUATEMALAN	00000	00000	00000	11111
COLOMBIAN	11111	00000	00000	11111
NICARAGUAN	00000	00000	00000	11111
PUERTO RICAN	None	None	None	None
CUBAN[5]	None	None	None	None

By looking at Table 5, it is possible to observe that varieties with very different Dialect factor weights (e.g. Salvadorian .32; and Peruvian .61) obey the same grammatical principles (Non-Agent subjects favoring, Agent subjects disfavoring; Creator verbs favoring, Other verbs disfavoring), while dialects that present closer probability of CT violation (e.g. Paraguayan .86; and Ecuadorian .72) are subject to different internal mechanisms (Agentivity is a significant factor group in Paraguayan but is not significant in Ecuadorian).

Obviously, the recoding process could have been done in several ways, I opted for this one to limit the study to an analysis considering favoring vs. non-favoring factors; it must be kept in mind that more sophisticated recodification tables, with larger series of digits, could have been created e.g. tables accounting for the incidence of each factor weight on the probability of the phenomenon occurring.

Figure 2 provides a graphic picture of the internal factors regulating CT in the dialects analyzed.

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Figure 2. Splits graph representing Dependent Clause Subject Agentivity and Verb Class factor groups affecting CT violation in 20 Spanish dialects.

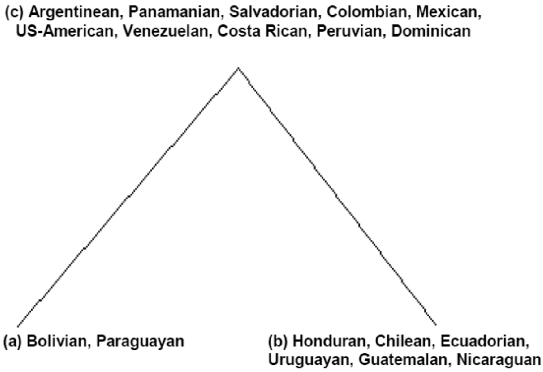

Figure 2 shows the presence of three different groups of dialects:

• Varieties in which dependent clause subject agentivity is significant (non-agent favoring, agent disfavoring) and verb class is not;

• Varieties in which dependent clause subject agentivity is not significant and verb class is (creator verbs disfavoring, other favoring);

• Varieties in which both dependent clause subject agentivity and verb class are significant (non-agent favoring, agent disfavoring, creator verbs disfavoring, other favoring).

It can be noticed that Bolivian and Paraguayan, the dialects that show the highest rate of CT violation, are also the only two dialects to obey the internal principle of group (a), and the only group in which Verb Class is not significant. This indicates that the two dialects are substantially different from the other ones as the presence of creator verbs, whose semantic properties, according to Carrasco-Gutiérrez (1999), do not allow for the appearance of a present tense in the dependent clause, does not represent an obstacle to the violation of CT.

On the other hand, the same cannot be said for the dialects belonging to group (b) and (c); here, varieties reg-

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ulated by the same internal principles present huge differences in the statistical violations of CT. Note however that in both (b) and (c), the Verb Class factor group is significant, with Creator Verbs disfavoring the phenomenon and Other favoring it. The only factor group differentiating them is Dependent Clause Subject Agentivity: in certain varieties (group c) Non-Agent subjects favor the lack of concord, while in other dialects (group b) this factor group is not significant. There can be multiple reasons behind the results obtained for groups (b) and (c). To find a solution we could contemplate several possible factors, such as: errors, the need of more tokens, the need of more factor groups, and so forth. However, as Algernon said to Jack in Act 1 of *The Importance of Being Earnest* (Wilde 1895) and as Bryant, Filimon & Gray (2005) pointed out: *"The truth is rarely pure and never simple".* In other words, sometimes languages pick different patterns just because!

If not completely understood these patterns can at least be represented. To do so, and to obtain a comparative picture accounting for the factor groups Dialect, Dependent Clause Subject Agentivity and Verb Class, across the varieties studied, the matrixes created for the first and second run of Splits Tree 4 have been combined and ran again.

The results are presented here in Figure 3 and Table 7.

Figure 3. Splits graph representing Dialect, Dependent Clause Subject Agentivity and Verb Class factor groups affecting CT violation in 18 Spanish dialects.



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Table 7. Mean percent difference in configuration of the internal factors affecting CT variation. Distance calculated from the VARBRULE results obtained employing Dialect, Dependent Clause Subject Agentivity and Verb Class as factor groups in 18 Spanish varieties.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
[1]BOLIVIAN	.00																	
[2]US-AMERICAN	.37	.00																
[3]MEXICAN	.33	.03	.00															
[4]VENEZUELAN	.33	.03	.00	.00														
[5]CHILEAN	.47	.23	.20	.20	.00													
[6]COSTA RICAN	.27	.10	.07	.07	.20	.00												
[7]PERUVIAN	.27	.10	.07	.07	.20	.00	.00											
[8]DOMINICAN	.30	.07	.03	.03	.17	.03	.03	.00										
[9]PARAGUAYAN	.00	.37	.33	.33	.47	.27	.27	.30	.00									
[10] HONDURAN	.47	.23	.20	.20	.00	.20	.20	.17	.47	.00								
[11] ARGENTINEAN	.30	.07	.03	.03	.17	.03	.03	.00	.30	.17	.00							
[12]PANAMANIAN	.33	.03	.00	.00	.20	.07	.07	.03	.33	.20	.00	.00						
[13]SALVADORIAN	.37	.00	.03	.03	.23	.10	.10	.07	.37	.23	.07	.03	.00					
[14]ECUADORIAN	.40	.30	.27	.27	.07	.20	.20	.23	.40	.07	.23	.27	.30	.00				
[15]URUGUAYAN	.43	.27	.23	.23	.03	.17	.17	.20	.43	.03	.20	.23	.27	.03	.40			
[16]GUATEMALAN	.53	.17	.20	.20	.07	.27	.27	.23	.53	.07	.23	.20	.17	.13	.00	.00		
[17]COLOMBIAN	.33	.03	.00	.00	.20	.07	.07	.03	.33	.20	.03	.00	.03	.27	.23	.20	.00	
[18] NICARAGUAN	.50	.20	.17	.17	.03	.23	.23	.20	.50	.03	.20	.17	.17	.10	.07	.03	.17	.00

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The splits graph of Figure 3 shows clearly the presence of the three different groups, namely (a), (b) and (c). On one hand, it can be observed that split (1), which isolates (a) from (b) and (c), besides reflecting a higher Dialect factor weight, represents the lack of significance for Verbal Class. While, on the other hand, splits (2) separates the varieties that are sensitive to Dependent Clause Subject Agentivity from those that are not. In addition, all the dialects are joined to each other by smaller splits, representing the distance between the values of the other Dialect factor weights. By looking at this general figure, it is possible to see how each dialect of group (b) has one or more 'sister' varieties in group (c), showing similar CT violation probability but differing in the principles regulating it. If we look at the results of Table 1 for the factor group Dialect, certain varieties appear to be very close or even overlapping i.e. Honduran-Argentinean (factor weight .53), while others seem relatively further apart i.e. Ecuadorian (factor weight .72)-Nicaraguan (factor weight .41), however, when other factors besides Dialect are taken into account, significant differences are encountered; for example Splits Tree 4 indicates a higher relative distance between Honduran and Argentinean (.17) than between Ecuadorian and Nicaraguan (.10).

As this analysis represents one of several possible ways in which the data could have been recoded, and as the number of tokens encountered in CREA differs significantly from dialect to dialect, the present study makes no absolute claim on the results obtained for all the Spanish varieties analyzed. The final goal of this paper, besides showing how Agentivity and Verb Class play a role in Spanish CT, is to turn the readers' attention to how interdisciplinary methods can cooperate to shed light on linguistic phenomena; in this specific case, to show how Splits Tree 4, a program created for working with data from genetics, can be employed as a useful tool for linguistic analysis.

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5. Conclusion

Building on Sessarego's (2008) findings, which differ from previous studies of Spanish Concordantia Temporum (Suñer & Padilla-Rivera 1987; Carrasco-Gutiérrez 1999; 2000) in that I approached the phenomenon from a variationist perspective, this work has attempted to offer a possible picture of the role played by Dialect, Verb Class and Agentivity in the alternation between present and past subjunctive in dependent nominal clause in 20 Spanish varieties.

It is my inference, based on the VARBRUL results and the prior literature, that for certain dialects, namely Bolivian, US-American, Mexican, Venezuelan, Costa Rican, Peruvian, Dominican, Paraguayan, Argentinian, Panamanian, Salvadorian and Colombian, the presence of a non-agent subject in the dependent clause favors the occurrence of a simplification pattern as a means to avoid redundancy. In these cases, the simplification hypothesis of the subjunctive paradigm (Kany 1945; 1987; Lunn 2007) seems to be supported if we assume that the temporal reference of the subordinate clause is determined by that of the main clause (plus context) and as a result tense agreement is not necessary.

Paraguayan and Bolivian Spanish have shown to behave very differently from the rest of the dialects with respect to *Concordantia Temporum* violations. While the Verb Class factor group is not significant for these two Spanish varieties, it is so for the other dialects analyzed. It is worth pointing out that Bolivian and Paraguayan distinguish themselves from the rest also for the highest rate of CT violation (factor weight .89 and .86 respectively). This seems to indicate that the phenomenon is encountered at a different level in the two dialects if compared with the rest. In Bolivia and Paraguay, where *Concorantia Temporum* violation is more common, it is easy to find present subjunctive in nominal clauses, even with verbs that should not allow its presence (Carrasco-Gutiérrez 1999) when the TOC condition is respected. On the other hand, this unfamiliar employment of present constructions is disfavored in the rest of the varieties studied where the phenomenon

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is seemingly restricted to fewer contexts.

This study shows that differences in the rate of CT violation do not necessarily imply differences in the internal mechanisms regulating it and vice versa. Unfortunately, a single VARBRUL analysis cannot show how dialects diverge according to their internal grammatical principles. The only way to obtain such information is to run a separate analysis for each dialect and then to tediously compare the findings. To overcome such a technical impediment, I employed Splits Tree 4, which provided a comprehensive picture of the factors regulating CT in the Spanish dialects under study in a clearer and more convenient representation. The graphs and the distance tables resulting from the different runs identify clearly three separate groups of dialects, which obey to different internal principles. Bolivian and Paraguayan have been proven to be special and for these reasons they are pictured far away from the other varieties. The rest of the dialects are spatially located in a configuration indicating that for each level of CT violation probability, dialects obeying different sets of principles are encountered. For this reason, it is possible to conclude that similar factor weights do not necessarily mean similar internal factors regulating the variation.

Finally, besides illustrating some possible tendencies affecting Spanish CT variation, this article provided an example of how software programs created for different disciplines can be combined to better describe language phenomena.

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NOTAS

[1] I would like to thank Swintha Danielsen for introducing me to Splits Tree 4. Usual disclaimers apply.

[2] Negation in the matrix sentence and interrogation are examples of operator-like entities.

[3] Peruvian, Verbal Class: Creator Verbs (Factor Weight .30); Other (Factor Weight .72).

[4] In the translation to a binary code numbers values have been rounded to the first decimal.

[5] No significant run for Puerto Rican and Cuban dialects. Too few tokens, knock-outs data present.

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