



TEMPORAL REFERENCE, ANAPHORICITY AND NARRATIVE DISCOURSE

A parallel corpus study of the
French novel *L'étranger* and its
translations.



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Time in Translation, NWO free competition programme
<http://time-in-translation.hum.uu.nl/>



Netherlands Organisation
for Scientific Research

Anaphoricity: key to narrative discourse (Partee 1984)

- Anaphoricity in the pronominal domain: reference to the same individual as the antecedent.
- Anaphoricity in the temporal domain: reference to another event at the same time or immediately after the most recent event (*...and then and then and then*).
- Telling a story: (i) Sequence of events (narration), (ii) overlapping situations: (background description).
- John got up (e_1), went to the window (e_2), and raised the blind (e_3). It was light out (s_1). He pulled the blind down (e_4) and went back to bed (e_5). He wasn't (s_2) ready to face the day. He was (s_3) too depressed. [Partee 1984]
- $e_1 < e_2 < e_3$; $e_3 \text{ } 0 \text{ } s_1$; $e_3 < e_4 < e_5$; $e_5 \text{ } 0 \text{ } s_2 \text{ } 0 \text{ } s_3$.

Partee (1984): dynamic semantics of narrative discourse

- Following Kamp (1981), Hinrichs (1981), Bach (1981): tenseless sentences denote atomic eventualities (events e /states s).
- Neo-Reichenbachian analysis: reference time r . Events are included in r : $e \subseteq r$. States include r : $r \subseteq s$. Narrative progress modeled indirectly through updates of r .
- A state holds at the *current* reference time.
- An event occurs within the *current* reference time, and introduces a *new* reference time following the event.
- Standard theory: moving forward of narrative time $e_1 < e_2 < e_3 =$ moving forward the reference time in the story $r_1 < r_2 < r_3$.

Definite vs. non-definite tense-aspect forms

- Partee (1973): morphological tenses (*-ed* PAST) are anaphoric/definite, periphrastic tenses *have* + past participle (PERFECT), *will* + infinitive (FUTURE) are quantificational/indefinite.
- Reichenbach configurations for Past and Perfect (Portner 2003, 2012, Nishyama & Koenig 2010, others).
 - Sara left the party. Past tense E,R – S,
 - Sara has left the party. Present Perfect E – R,S



Semantics constrains PERFECT distribution

- **Sentence-level:** R at speech time restricts time adverbials:
 - Sara left the party at 6 o'clock.
 - *Sara has left the party a 6 o'clock (in British English).
 - Sare has just left.
- **Discourse-level:** R at speech time blocks anaphoricity, predicts no narrative use. No sequence of events with *Present Perfect* in narrative discourse or *when*-clauses:
 - When John noticed me, he greeted me.
 - *?When John has noticed me, he has greeted me.

Working theory for English, but not other languages

- French, Dutch, German PERFECT: compatible with past time adverbials.
 - Sara est partie à six heures. [French]
 - Sara is om zes uur vertrokken. [Dutch]
- French, German PERFECT: allow narrative use, not Dutch.
 - Quand Jean m'a vu, il m'a dit bonjour. [French]
 - ?Toen Jean me gezien heeft, heeft hij me gegroet. [Dutch]
- Three-way division of languages (de Swart 2007)
 - Dutch, German, French PERFECTS are compatible with past time adverbials;
 - German and French PERFECTS can be used to tell a story;
 - English cannot do either.

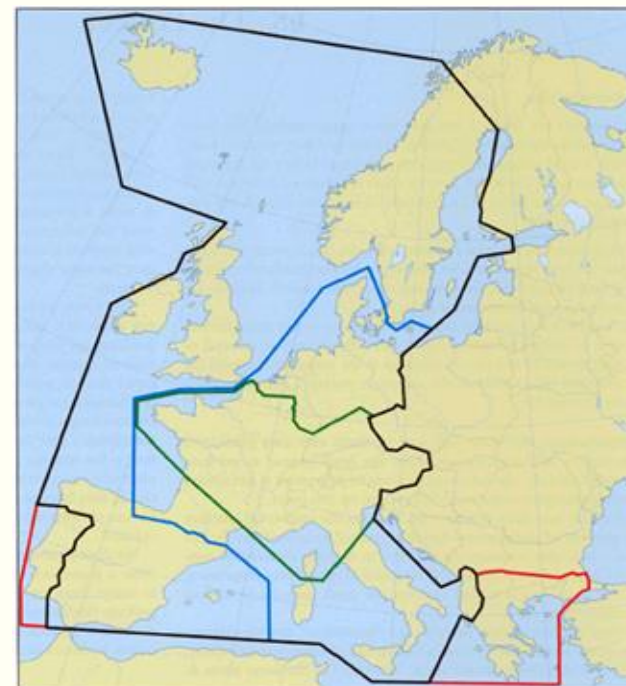


PERFECT is diachronically and synchronically unstable

- Schaden (2009): competition between PAST and PERFECT. Spanish/English pattern together, as opposed to German/French.
- Micro-variation across world Englishes: ‘vivid’ narrative use of *Present Perfect* in Australian English (Ritz & Engel (2008)).
- PERFECT is diachronically and synchronically unstable (Bybee et al. 1989, Ritz 2012).
- Surprisingly: distributional variation has had little impact on semantic theories of the PERFECT (mostly focused on English).

Broader typological perspective

- Morpho-syntactic structure of the PERFECT: *have/be* + past participle
- Dahl & Vellupillai (2013): PERFECT category is found in (western) European languages.
- Greek has a narrower distribution of the PERFECT than other European languages.
- French shows a wider use; development into PERFECTIVE PAST, Lindstedt (2000).



Present-day boundaries of the area where 'have' perfects (perfects based on a transitive possessive construction) and constructions derived from them occur

Peripheral area where less typical 'have' perfects are found

Area of division of labour between 'have' perfects and 'be' perfects

Area where a 'have' perfect has developed into a past or a perfective

Competition PAST/PRESENT PERFECT

- Central research questions:
 - What constitutes the distinguishing feature between PAST and PRESENT PERFECT in languages that have both? Is it narrative use or something else?
 - What are the implications for languages that don't have a PERFECT?
- Answers based on:
 - Parallel corpus approach: translation = same meaning in context, different forms.
 - Data-driven: search for PERFECT forms in one language, align with translations, analyze tense use in context.
 - Analyze data patterns to find linguistic generalizations.

Corpus: French novel *L'étranger* and its translations

- Classical narration in French literature: *Passé Simple* + *Imparfait* (= PERFECTIVE/IMPERFECTIVE PAST ≈ sequence of events/states).
- *L'Etranger*: sequence of *Passé Composé* + *Imparfait* (= PERFECT + IMPERFECTIVE PAST).
- Shocking! (at least in 1942). Certainly not regular narrative style. Sartre: every sentence constitutes an island.
- Obviously this style raises translation problems in languages that have a less liberal use of the PERFECT.
- Approach: temporal maps showing the competition between PERFECTIVE PAST and PERFECT.



*the stranger/ de vreemdeling/
el extranjero/ der Fremde/...*

Data collection

- Convert the original and its translations into electronically readable documents.
- PERFECT extractor: algorithm that collects all the sentences in the Passé Composé (auxiliary+past participle) from chapters 1-3 of *L'Etranger* (302).
- Align the sentences in the *Passé Composé* with their translations in English, Italian, Spanish, German, Dutch and modern Greek.
- Select the verbs in the translation, and specify their tense form (language specific morpho-syntactic labels): *Present Perfect, Simple Past, Pretérito Indefinido, Präteritum, Onvoltooid Verleden Tijd*, etc.

Forms used in the translation of the *Passé Composé*

Decreasing order of frequency + generic categories PERFECT, PAST (simple or perfective), PRESENT.

Italian		English		Spanish	
passato prossimo	298	simple past	286	pretérito indefinido	289
Imperfetto	3	present perfect	9	pretérito perfecto compuesto	12
Infinitif	1	present participle	6	pretérito imperfecto	1
		simple present	1		
Modern Greek		German		Dutch	
Aorist	286	Perfekt	284	Ovt	269
Past	7	Präteritum	17	Vtt	29
Enestotas	3	Präsens	1	Infinitief	2
Ipersintelikos	2			Vvt	1
Paratatikos	2			Ott	1
Mellontas	1	French			
Parakimenos	1	passé composé	302		

Descriptive statistics

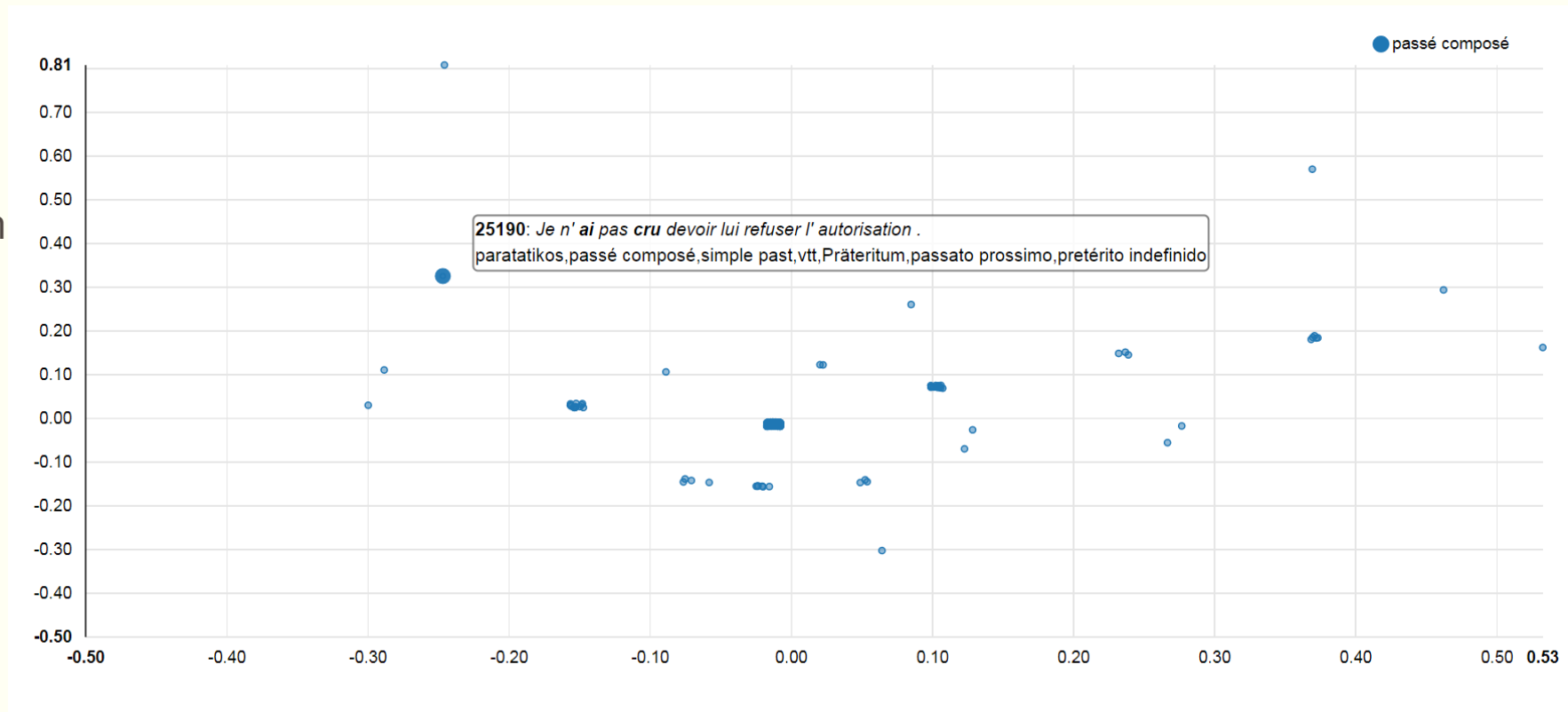
- The *Passé Composé* is generally translated by a PERFECT in Italian/German, and by a PAST in Dutch/Spanish/English/Greek.
- The most frequent combination (238 out of 302): <*Perfekt, Simple Past, Pretérito Indefinido, Passé Composé, Passato Prossimo, ovt, aorist*>.
- German patterns with French, Spanish pattern with English: variation within the family of Romance/Germanic languages.
- More restricted use of the Greek PERFECT : single *parakimenos* in the corpus. Confirms observations by Dahl & Vellupillai (2013).

From statistics to language use in context

- Limits of descriptive statistics: global tendencies at the level of the grammar.
- Principle of isomorphism (Haiman 1985): variation in form reflects variation in meaning.
- *Multidimensional Scaling* (Wälchli & Cysouw 2012): generate a cartographic visualization of groups of tense uses in context.
- The algorithm is based on similarities between verb forms to regroup contexts in a two-dimensional space. Multilingual comparison.

Temporal map of French original: all *Passé Composés*

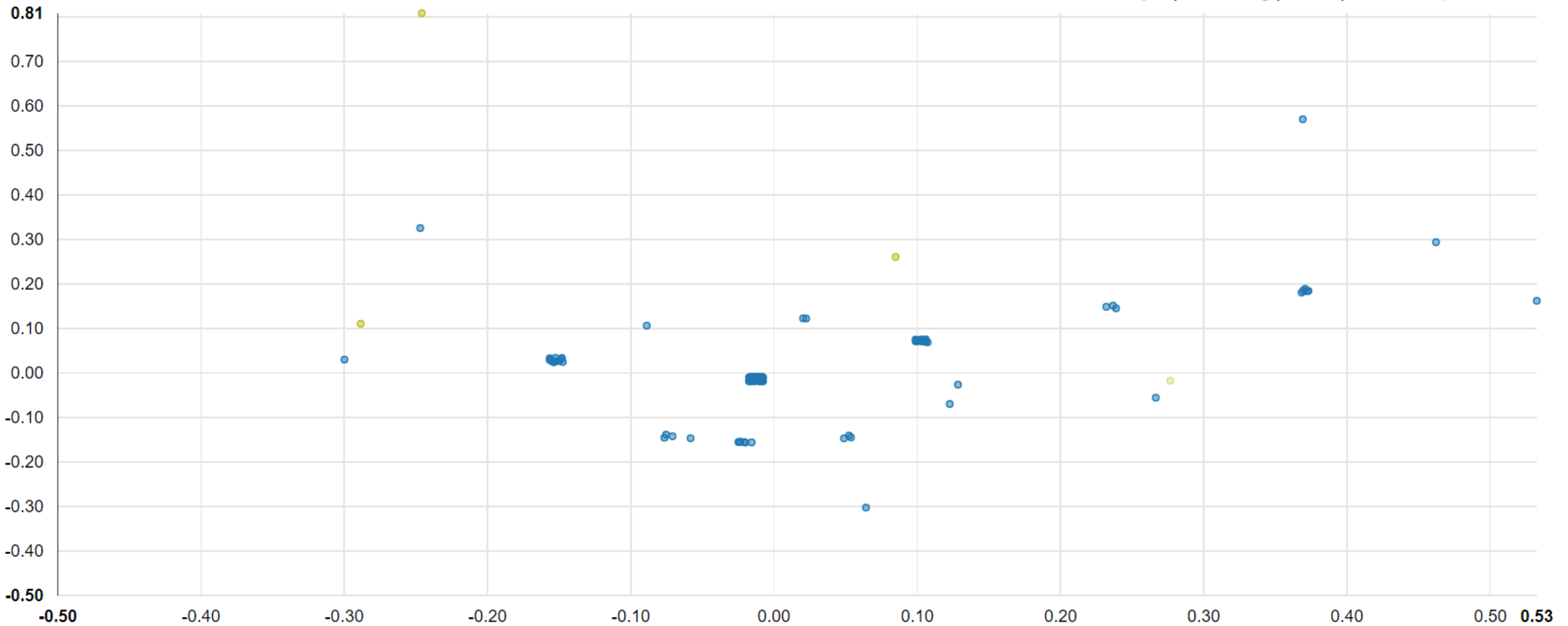
The algorithm creates a two-dimensional map, based on the comparison of all contexts in all the languages.



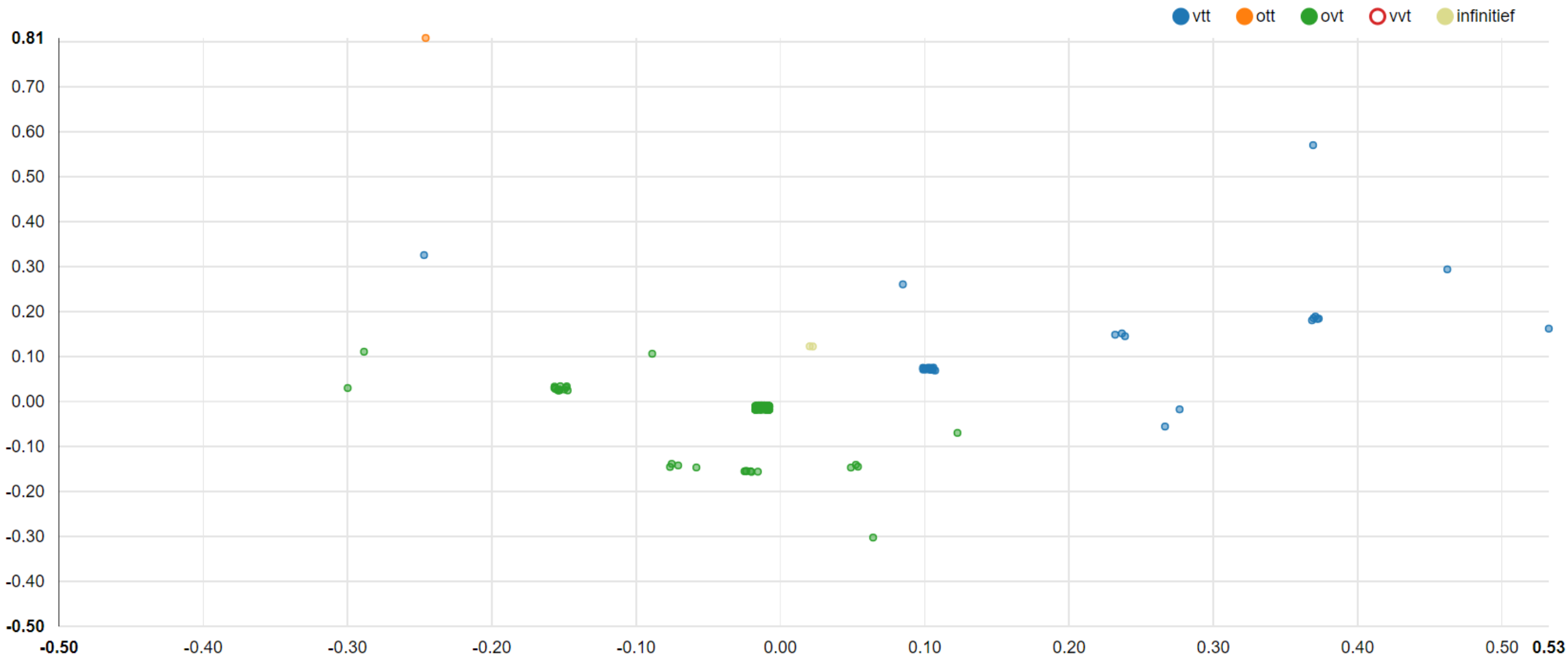
- Each dot represents a context.
- Interactive interface : point to a dot to see the original example+tense forms in translation.

Italian map

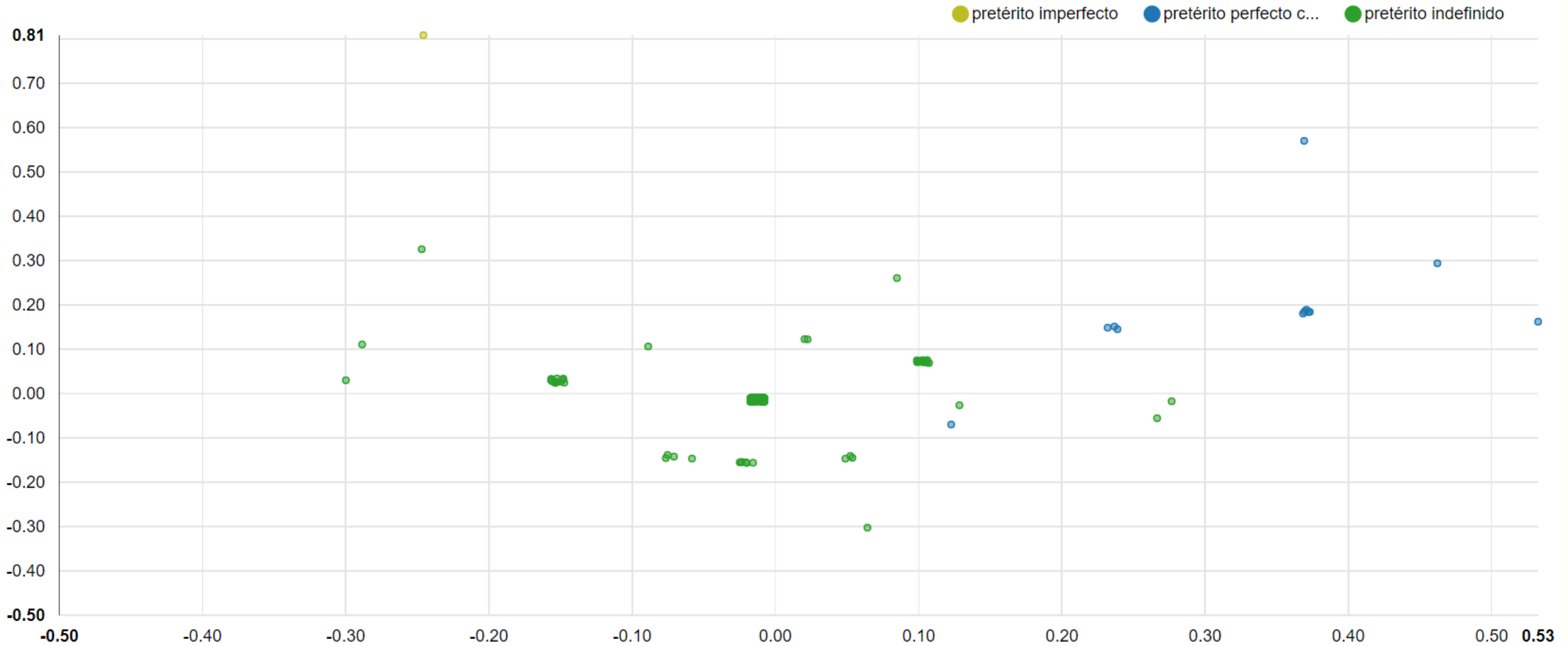
● imperfetto ● passato prossimo ● infinitif



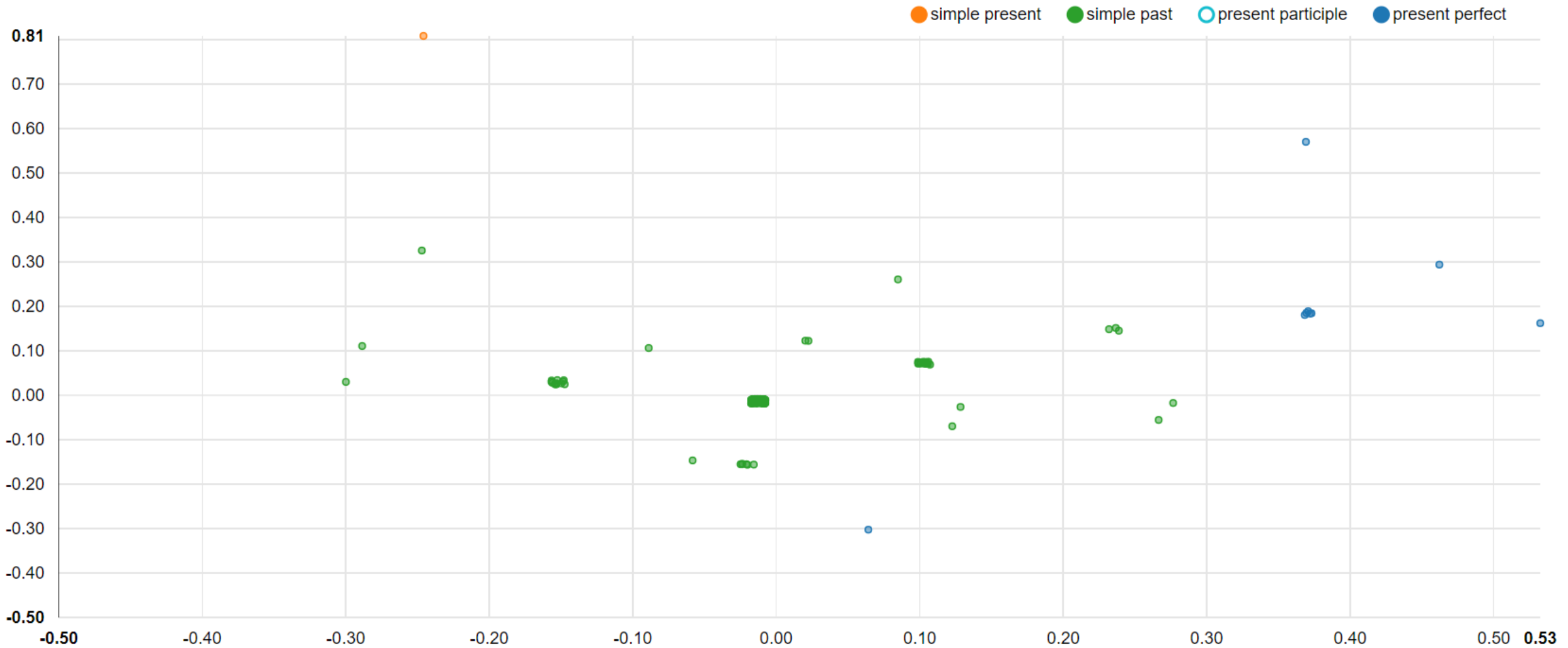
Dutch map



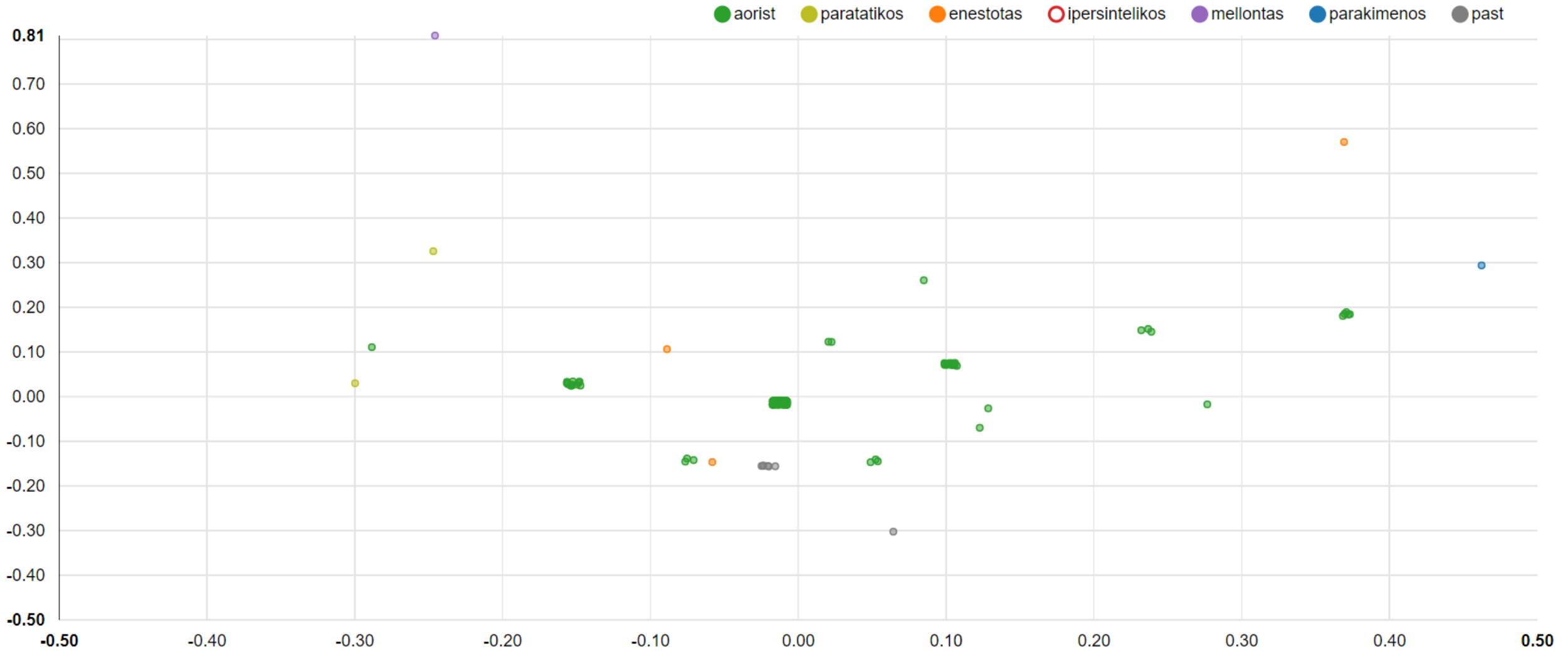
Spanish map



English map



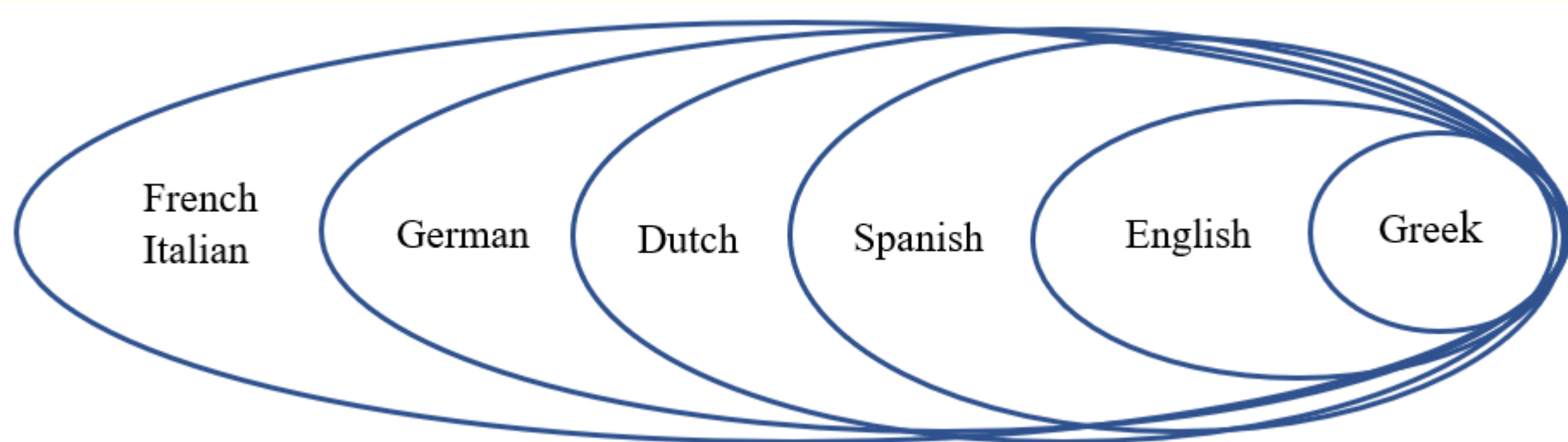
Greek map



Discussion

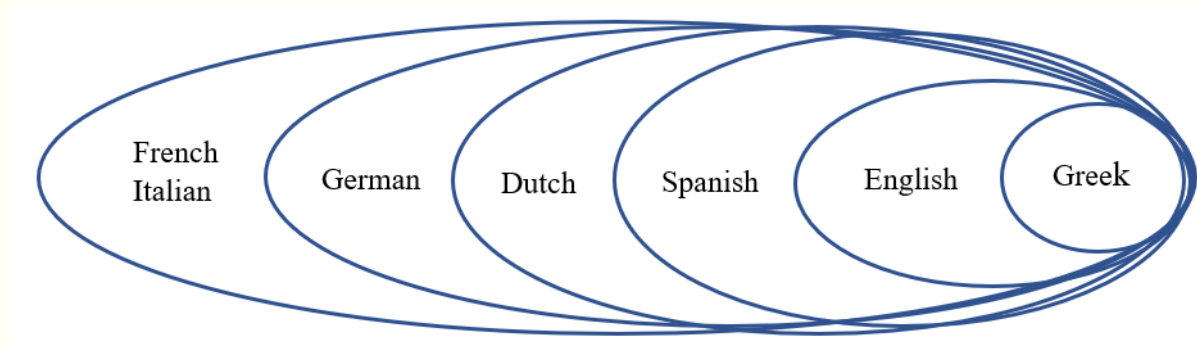
- Distribution of the Italian *Passato Prossimo* is almost identical to that of French *Passé Composé* (Bertinetto 1986, Georgi & Pianesi 1997).
- From German onwards, there is a group of contexts in the PAST.
- The order of presentation of the maps reflects the change in color from blue to green: decreasing number of PERFECTS, increasing number of PASTS.

Beyond descriptive statistics: once a point has changed color, it stays green in the next maps: subset relation.



From distribution to linguistic analysis

- Subset relation reflects competition: PAST ← ... → PERFECT
- Isomorphism: ‘past’ meanings more to the left, ‘perfect’ meanings more to the right.
- Convex meaning space (Zwarts & Gärdenfors 2016, Chemla 2017): the denotation of the perfect constitutes an ordered domain, supporting an in-between relation, with no gaps.



From the maps to the data: interactive interface

- Convex meaning space but no single cut-off point - sliding scale with intermediate positions.
- Original input: all PERFECT. What drives the transition from PERFECT to PAST in each language?
- Interactive interface: from the maps to the underlying data.

Dynamic Interface: back-and-forth between maps and data

● simple present ● simple past ● present participle ● present perfect

← Point the mouse to a context to see the example+ tense labels in translations.

24646: J' ai reçu un télégramme de l' asile : Mère décédée .
aorist,passé composé,simple past,ovt,Perfekt,passato prossimo,pretérito perfecto compuesto

Fragment overview

Source

French

passé composé (fr) 1.xml - 24646

J' ai reçu un télégramme de l' asile : Mère décédée .

Translations

German

Perfekt

Ich habe ein Telegramm vom Heim bekommen : « Mutter verstorben .

English

simple past

I had a telegram from the home : ' Mother passed away .

Spanish

pretérito perfecto compuesto

He recibido un telegrama del asilo : « Madre fallecida .

Italian

passato prossimo

Ho ricevuto un telegramma dall' ospizio : " Madre deceduta .

Dutch

ovt

Ik ontving een telegram uit het gesticht : ' Moeder overleden .

Click on a point to get to the underlying data: sentence from source text+ translation in other languages. →

Demarcation lines between languages: French and German

- Temporal maps of French and Italian: almost identical.
- Demarcation line between French/Italian and German: stative verbs (lexical semantics).
- Subset relation: all other languages require a PAST tense form with states.

a.	<i>J'ai voulu</i> voir maman tout de suite.	[French]
b.	Ich <i>wollte</i> sofort zu Mama.	[German]
c.	Ik <i>wilde</i> moeder meteen zien.	[Dutch]
d.	Yo <i>queréa</i> ver a mamá inmediatamente.	[Spanish]
e.	I <i>wanted</i> to see mother straight away.	[English]

Dutch versus German: narration

- The German **Perfekt** can be used to tell a story. (Löbner 2001, Schaden 2009).
- The Dutch **VTT** resists temporal progress in discourse (dynamic semantics).

- | | | |
|----|---|-----------|
| a. | <i>Il est sorti, est revenu, a disposé des chaises.</i> | [French] |
| b. | <i>Er ist hinaus gegangen, ist wieder gekommen, hat Stühle aufgestellt.</i> | [German] |
| c. | <i>Hij ging naar buiten, kwam weer terug en zette stoelen neer.</i> | [Dutch] |
| d. | <i>Salió, volvió y colocó la sillan.</i> | [Spanish] |
| e. | <i>He went in and out, arranging chairs.</i> | [English] |

Dutch versus Spanish: boundedness

- Sentences describing a state or a process delimited by a temporal or spatial adverbial are expressed by the PERFECT in Dutch/German/French, but require the *Préterito Indefinido* in Spanish. (compositional semantics).

- | | | |
|----|--|-----------|
| a. | Je crois que j' <i>ai somnolé</i> un peu. | [French] |
| b. | Ich glaube ich <i>habe</i> ein Bischen <i>gedöst</i> . | [German] |
| c. | Ik geloof dat ik een beetje <i>heb gedoezeld</i> . | [Dutch] |
| d. | Creo que <i>dormité</i> un poco. | [Spanish] |
| e. | I think I <i>dozed off</i> for a while. | [English] |

Spanish vs. English: ‘classical’ vs. ‘extended’ PERFECT

- Perfect should be compatible with deictic adverb referring to ‘today’. Indeed, *Pretérito Perfecto Compuesto* in Spanish, but *Simple Past* in English and Greek.

a.	Aujourd’hui, maman <i>est morte</i> .	[French]
b.	Hoy, mamá <i>ha muerto</i> .	[Spanish]
c.	Mother <i>died</i> today.	[English]

- ‘Novelty’ of the PERFECT state and current relevance (information structure, pragmatics)

a.	L’un m’a même crié: “On les <i>a eus</i> !”	[French]
b.	Uno gritó incluso : “Les <i>hemos ganado</i> .”	[Spanish]
c.	One of them even shouted to me, “We <i>thrashed</i> them.”	[English]

Classical use: resultative PERFECT

- Result with current relevance: PERFECT in all languages except Greek (*Aorist*).

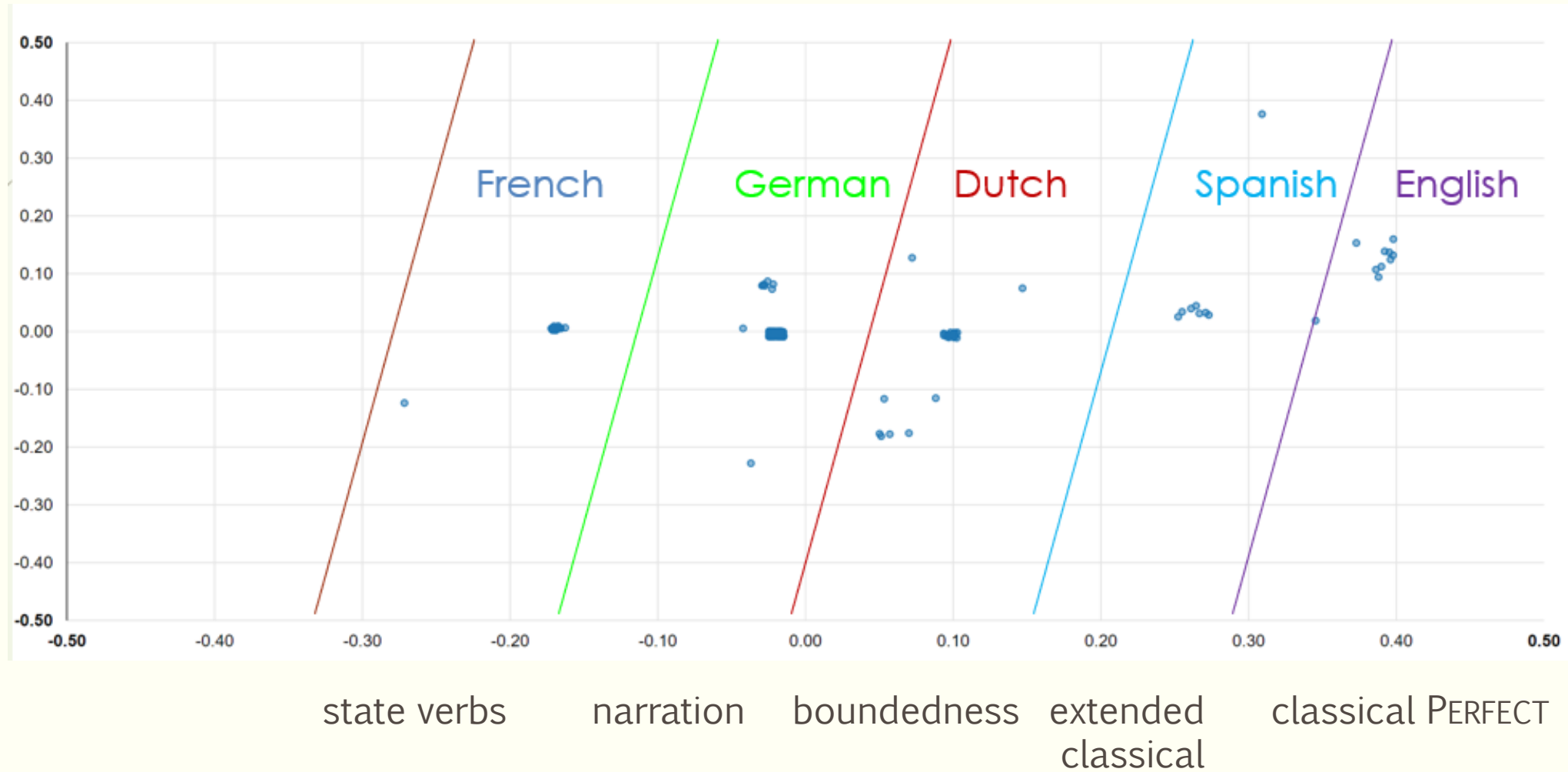
- a. Dans l'escalier, il m'a expliqué : « Nous l'*avons transportée* dans notre petite morgue. » [French]
- b. Auf der Treppe hat er mir erklärt : « Wir *haben* sie in unsere kleine Leichenhalle *gebracht*. » [German]
- c. Op de trap vertelde hij mij: “Wij *hebben* haar naar ons lijkenhuisje *gebracht*.” [Dutch]
- d. En la escalera me explicó : « La *hemos transportado* a nuestro pequeño depósito. » [Spanish]
- e. On our way downstairs he explained, “We’ve *transferred* her to our little mortuary.” [English]
- f. Στη σκάλα, μου εξήγησε : « Τη *μεταφέραμε* στο μικρό μας νεκροθάλαμο. » [Greek]

Classical use: existential PERFECT

- Existential reading (role of negation!): PERFECT In all languages, including modern Greek.

- | | | |
|----|---|-----------|
| a. | Depuis huit ans, ils n' <i>ont</i> pas <i>changé</i> leur itinéraire. | [French] |
| b. | Seit acht Jahren <i>haben</i> sie ihre Route nicht <i>geändert</i> . | [German] |
| c. | In al die acht jaar <i>hebben</i> zij hun wandelroute niet <i>veranderd</i> . | [Dutch] |
| d. | Al cabo de ocho años, no <i>han cambiado</i> de itinerario. | [Spanish] |
| e. | In eight years they <i>haven't changed</i> their route. | [German] |
| f. | Εδώ κι οχτώ χρόνια δεν <i>έχουν</i> <i>αλλάξει</i> διαδρομή. | [Greek] |

Linguistic principles governing variation



Generating PERFECTS in translation

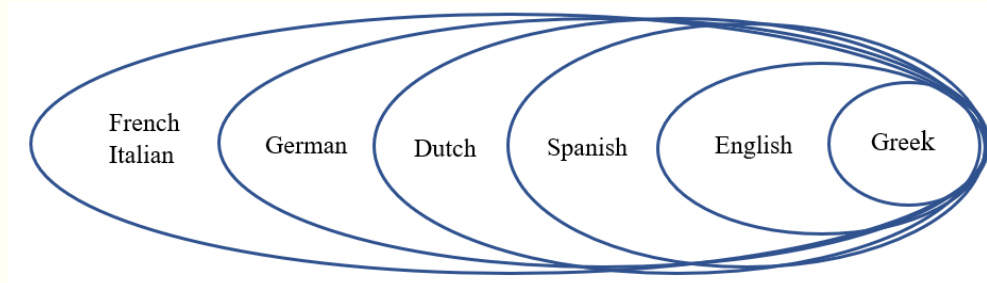
- So far: French source language, so translations from *Passé Composé* into other languages. What about PERFECTS generated in translation?
- Very few datapoints in Chapter 1, but: continuative PERFECT in English.
 - a. J'ai dit au concierge, sans me retourner vers lui : « Il y a longtemps que vous *êtes* là ? »
[French]
 - b. Ich habe, ohne mich umzudrehen, zum Pförtner gesagt: “*Sind* sie schon lange hier?”
[German]
 - c. Zonder mij naar de conciërge om te keren zei ik tegen hem: “Hoe lang *bent* u al hier?”
[Dutch]
 - d. Sin volverme hacia él, dije al conserje: « ¿Hace mucho tiempo que *está* usted aquí? »
[Spanish]
 - e. Without turning round, I said to the caretaker, “*have* you *been* here long?”
[English]

Conclusions about the cross-linguistic distribution of the PERFECT

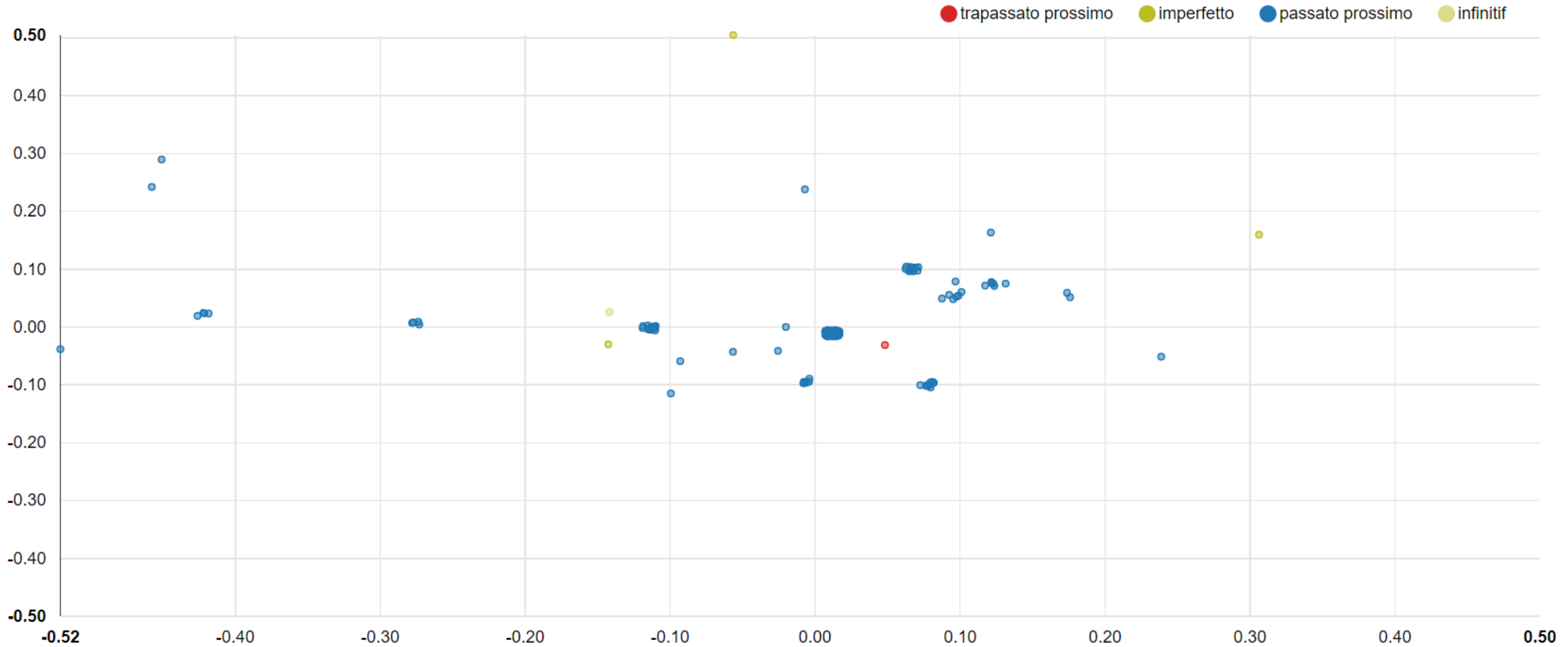
- Descriptive statistics show the global tendencies in the grammar.
- The temporal maps show that the distribution of tense forms is organized as a subset relation: the shrinking domain of the PERFECT gives rise to a wider use of the PAST.
- Investigation of the individual data points provides the demarcation lines between each pair of languages.
- The linguistic principles governing the variation between languages imply (i) lexical semantics (stative verbs), (ii) compositional semantics (boundedness, continuity), (iii) dynamic semantics (narration) and (iv) pragmatics (information structure).

Implications for semantic theories of the PERFECT

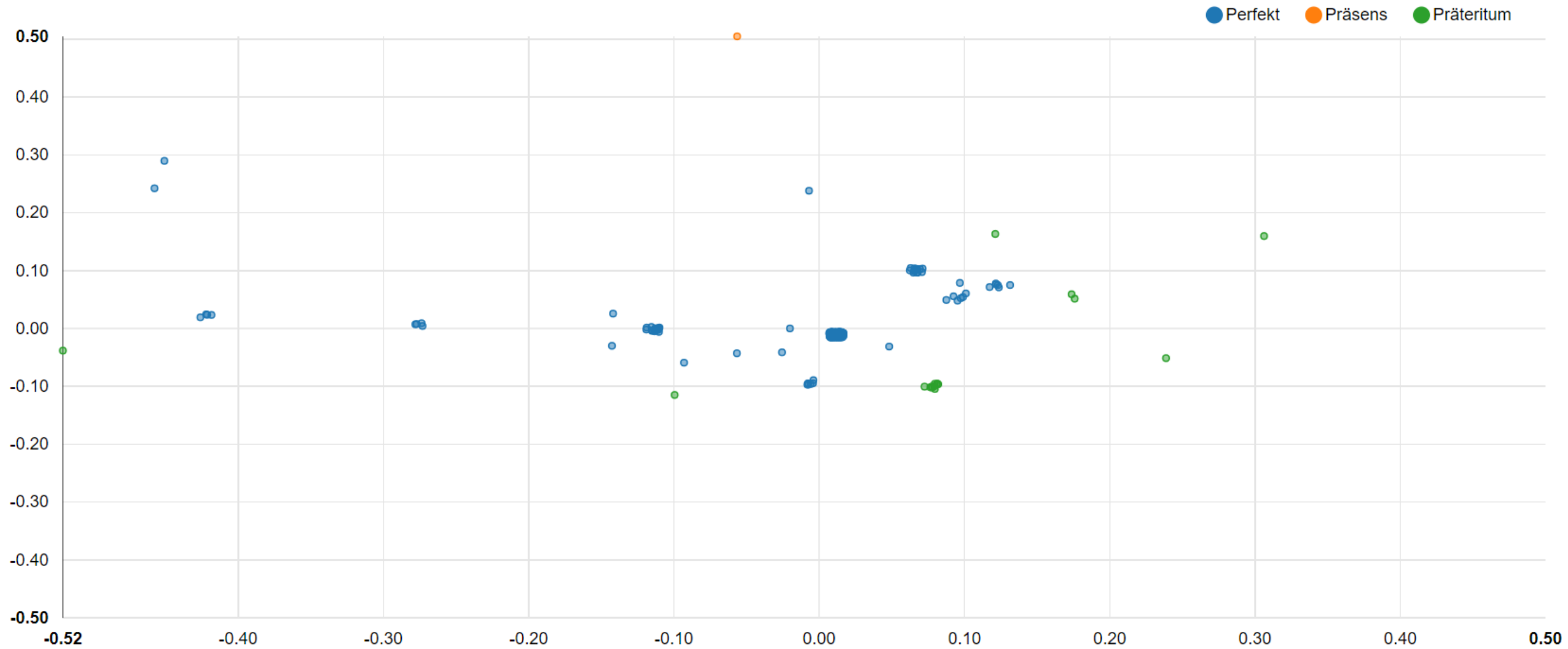
- PLUPERFECT, PRESENT and IMPERFECTIVE PAST have a cross-linguistically stable distribution. The *Passé Composé* and the *Passato Prossimo* have a wider distribution than the PERFECT in other languages.
- So the main competition is between the PERFECT and the PERFECTIVE PAST (Dahl & Vellupillai 2013).
- No single cut-off point between PERFECT and PERFECTIVE – sliding scale.
- Conclusion: we need to rethink the definition of PERFECT and PERFECTIVE.
- How? Possible strategy: investigate languages with a PERFECTIVE/ IMPERFECTIVE contrast, but no PERFECT. In casu: Russian



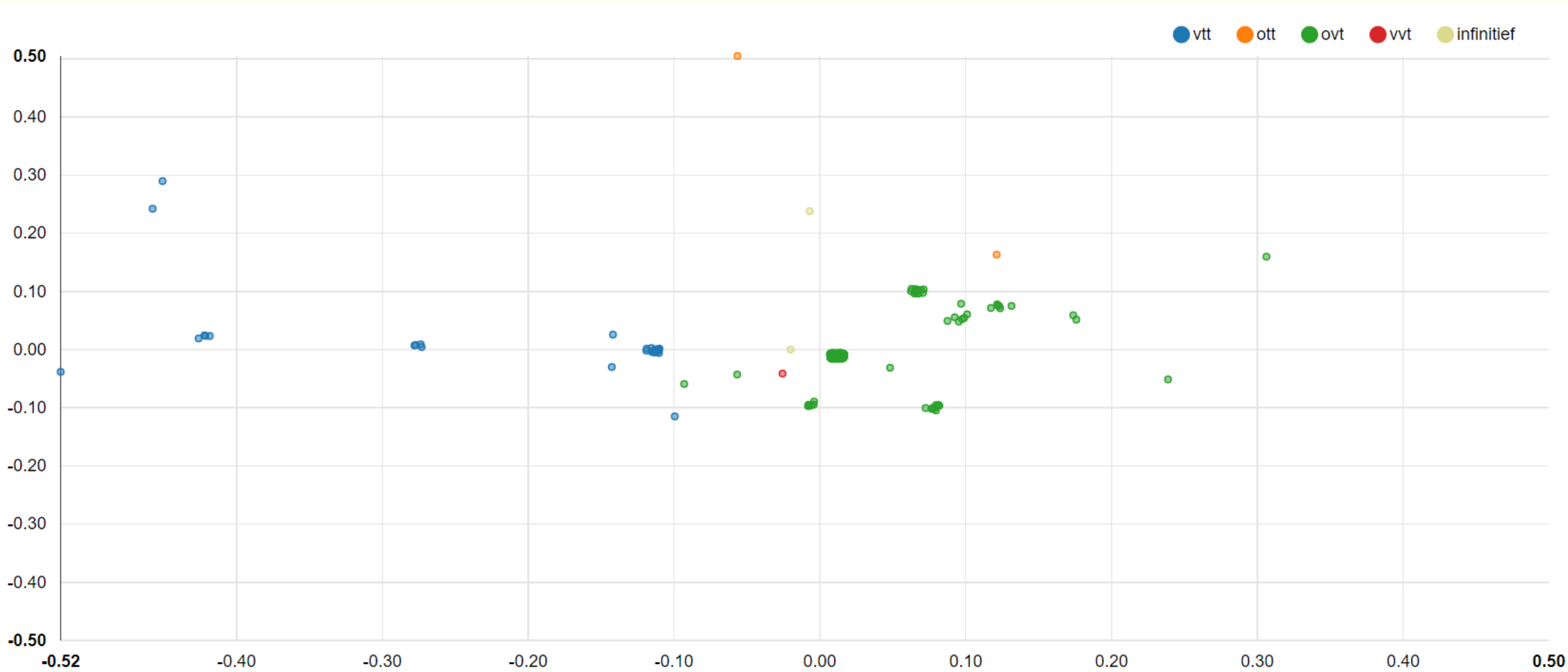
Temporal maps for EU languages plus Russian: Italian



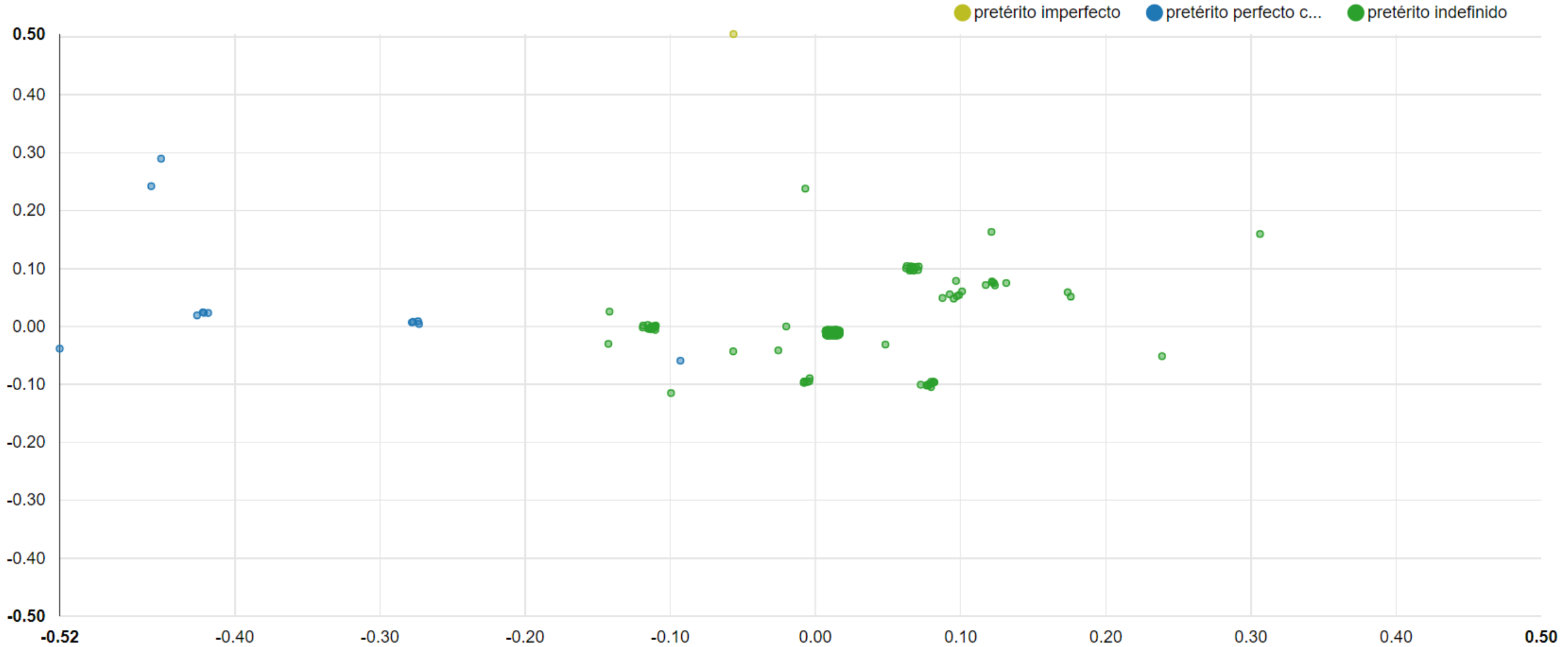
German map



Dutch map

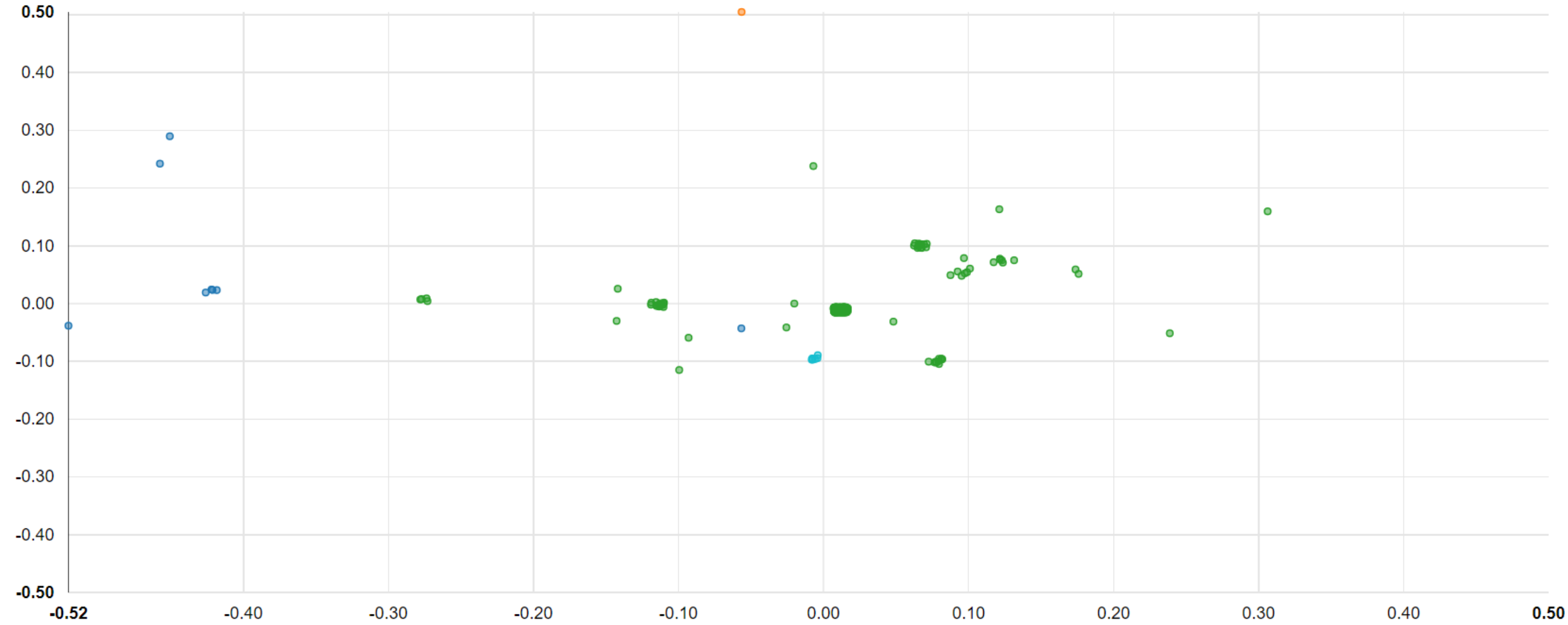


Spanish map

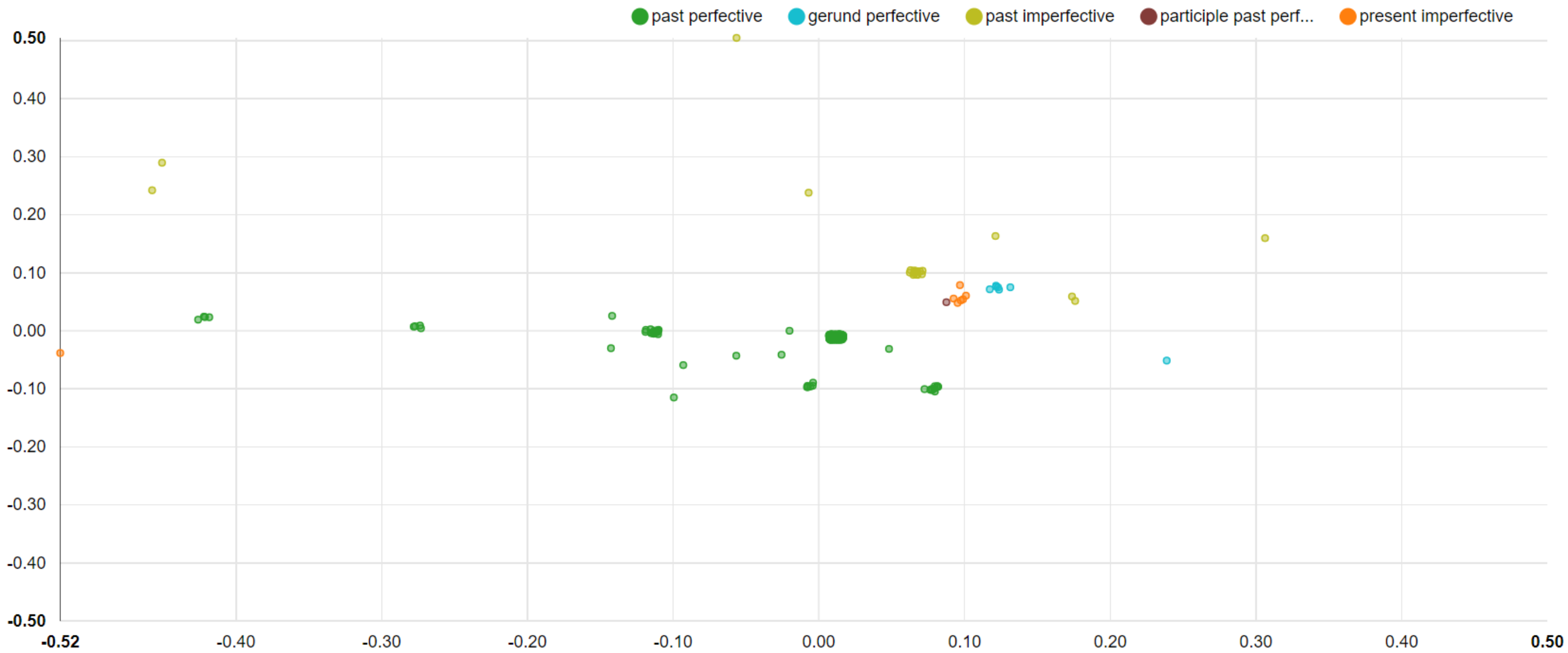


English map

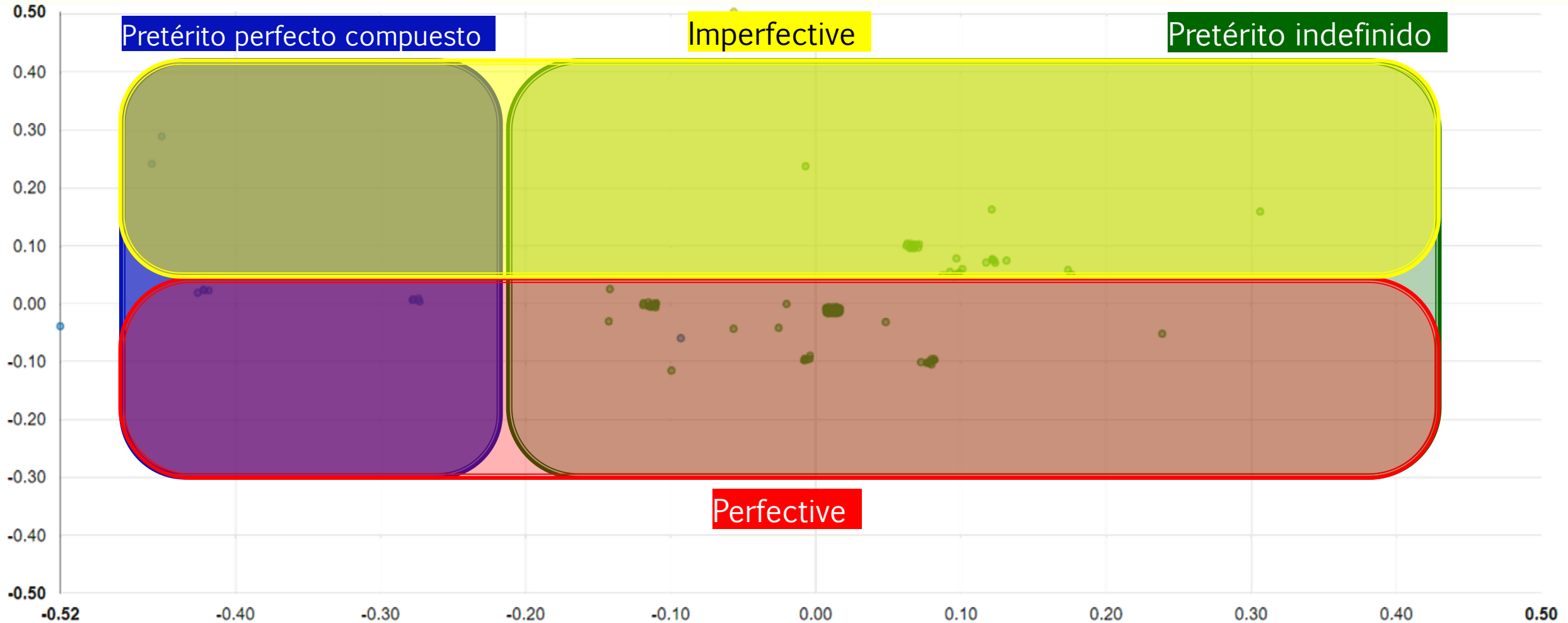
● simple present ● simple past ● present participle ● present perfect



Russian map



Spanish to Russian



● pretérito imperfecto ● pretérito perfecto c... ● pretérito indefinido > ● past perfective (● gerund perfective) ● past imperfective ● participle past perf... ● present imperfective

The Romance PERFECTIVE vs. the Slavic PERFECTIVE

Romance PERFECTIVE:

- External viewpoint, situation as a whole including beginning and endpoints.
- Event-like, definiteness, temporal progress in narrative discourse, $e \subseteq r$.
- Grammatical verb inflection, all verbs, only past tense.
- Quantized reference, boundedness.

Russian PERFECTIVE:

- External viewpoint, situation as a whole including beginning and endpoints.
- Event-like, definiteness, temporal progress in narrative discourse, $e \subseteq r$.
- Lexical/supra-lexical affixes, not all verbs, all verb forms (finite/non-finite).
- Telicity, measuring out, change-of-state.

Implications for translation: telic events

- Telic events (accomplishments, achievements) reported in the *Passé Composé* in the original and translated by means of a PERFECTIVE PAST in the Spanish translation as well as the Russian one.

a. *J'ai fait* la lettre.

b. *Hice* (Perf Pst) la carta.

c. I *wrote* a letter.

d. Я *написал* ПИСЬМО.
ya na-pica-l pismo
I.NOM PFV-write-PST.M letter. ACC

Implications for translation: atelic situations

- Atelic situations (states or activities), when reported in the *Passé Composé* in the original, and translated by means of the PERFECTIVE PAST in Spanish, give rise to an IMPERFECTIVE PAST verb form in Russian.
- Some verbs only have an imperfective form (no perfective counterpart), e.g. *to be*.

- J'ai eu de la peine à me lever, parce que j'étais fatigué de ma journée d'hier.*
- Me costó (Perf Pst) trabajo levantarme porque estaba fatigado de mi jornada de ayer.*
- I had trouble getting up because I was tired from the day before.*
- Встать с постели было трудно : я очень устал за вчерашний день
Vctat s postel-i by-l-o trudn-o: ya
get-up.INF. PFV out bed-LOC was-IPFV-PST-N hard-N: I.NOM
ochen usta-l za vcherashnij den.
very be-tired-PFV-PST.M on of-yesterday-ADJ.ACC.M day-ACC.M

Occurrence of a situation

- Occurrences of states/activities reported in the *Passé Composé* in the original, but without a clear result/change of state are translated by means of a PERFECTIVE PAST in Spanish, but an IMPERFECTIVE PAST in Russian.

a. Mais *j'ai hésité* parce que je ne savais pas si je pouvais le faire devant maman.

b. Pero *dudé* (Perf. Past) porque no sabía si podía hacerlo delante de mamá.

c. But I *hesitated* because I didn't know if I could smoke in front of mother.

d. Сперва я колебался, можно ли курить возле гроба.

Sperva ya koleba-l-sya moshno li kurit vozle grob-a

First I hesitate. IPFV-PST-REFL one-can if smoke.IPFV.INF next-to coffin

Atelic situation bounded by time adverbial

- PERFECTIVE/PERFECT in Romance, IMPERFECTIVE in Russian:
 - a. Je ne sais pas pourquoi nous *avons attendu* assez longtemps avant de nous mettre en marche.
 - b. Почему-то мы довольно долго ждали , прежде чем тронуться.
Pochemu-to my dovolno dolgo zhda-l-i, prezhde-chem tronut-sya
why-so we.NOM quite long.ADV wait.IPFV-PST-PL before start-REFL
- But: PERFECTIVE when exhaustive (situation ends with *cos*):
 - a. Nous avons pensé que vous pourrez ainsi *veiller* la disparue.
 - b. We thought that that would enable you to *watch* over the departed tonight .
 - c. Мы полагали, что таким образом вы сможете провести ночь у гроба покойницы
my polaga-l-i , shto takim obrasom vy
we-NOM think-IPFV-PST-PL that this-INST picture-INST you-PL.NOM
smozhete *pro-vecti* *noch* u grob-a pokoynizy
can-PFV.FUT PFV.lead-INF night-ACC by coffin-GEN deceased-GEN.F

Implications for translation: PERFECT meanings

- Situations reported in the *Passé Composé* in the French original, and rendered by the PERFECT in Spanish and English are translated by means of a PERFECTIVE or IMPERFECTIVE tense form in Russian, depending on telicity features.
- Telic events give rise to a PERFECTIVE PAST, atelic situations to an IMPERFECTIVE PAST. Event verb in experiential PERFECT:
 - a. *J'ai lu* le dossier de votre mère.
 - b. *He leído* el expediente de su madre.
 - c. *I've read* your mother 's file.
 - d. Я ознакомился с личным делом вашей матушки.
Ya *oznakomi-l-sya* s lichhym delom vashey
I.NOM study-PFV-PST.M-REFL with personal-INST file-INST your-GEN
mat-ushk-i
Mother-DIMINIUTIVE-GEN

PERFECT meanings (resultative)

- Event verb in resultative PERFECT:

- Et le fait est que la mort de Mme Meursault l'*a* beaucoup *affecté*.
- Y la verdad es que la muerte de la señora Meursault lo *ha afectado* mucho, pensé que no debía negarle la autorización.
- And the fact is that Mrs Meursault 's death *has affected* him very badly.
- И надо сказать, смерть мадам Мерсо глубоко его *опечалила*.
I nado skazat, smert madam Mereo gluboko ego opechali-l-a
And necessary say.PFV.INF death Madam Mereo deeply him sadden-PFV-PST-F

Implications for translation: PERFECT of atelic situations

- Atelic situations reported in the PERFECT in all languages translate by means of an IMPERFECTIVE PAST in Russian.

- a. Le soir, j' y trouve moins de plaisir parce que la serviette roulante qu'on utilise est tout à fait humide: elle *a servi* toute la journée.
- b. Por la tarde, disfruto menos porque la toalla giratoria que se utiliza está completamente húmeda: *ha servido* toda la jornada.
- c. I don 't enjoy it so much in the evening because the roller towel which people use is all wet: it's *been* there all day.
- d. В полдень это приятно – не то что вечером : тогда полотенце на катушке всегда бывает совершенно мокрое – ведь им пользовались целый день .
ved im *polzova-li-c* tselyy den
PRT it-INS use-IPFV-PST-REFL all day

Conclusions about Romance/Slavic PERFECTIVE aspect

- Romance PERFECTIVE/IMPERFECTIVE distinction overlaps with, but is not identical to the Slavic PERFECTIVE/IMPERFECTIVE aspect. Differences account for the presence of IMPERFECTIVE tense forms in the Russian translation of Camus.
- Russian PERFECTIVE: focus on telicity, change of state – overlap with PERFECTIVE PAST (eventlike) and resultative PERFECT in western European languages (current relevance).
- Lack of telicity results in IMPERFECTIVE verb forms in Russian, but in Spanish we find states/activities in both PERFECTIVE and PERFECT.
- Broader distribution of Russian IMPERFECTIVE (‘factive’ readings), see Grønn (2004, 2014), Altshuler (2012). Not found in this dataset.

Implications for semantic theory

- Russian PERFECTIVE/IMPERFECTIVE contrast not sensitive to PERFECT/non-PERFECT distinction – not restricted to definite/anaphoric readings. Grønn (2014): both definite and indefinite readings.
- Romance PERFECTIVE past does not allow existential readings, but English *Simple Past* does – rethink the correlations between definiteness, anaphoricity, narrative structure and temporal semantics.
 - a. *Je t'ai acheté* un ensemble ce mois-ci, je te paye vingt francs par jour, je te paye le loyer et toi, tu prends le café l'après-midi avec tes amies.
 - b. *Te he comprado* un conjunto este mes, te pago veinte francos por día, me encargo del alquiler y tú tomas café con tus amigas después de comer.
 - c. *I bought* you a new suit this month, I give you twenty francs a day, I pay your rent and you go and have coffee with your friends every afternoon.

General conclusions

- Data-driven methodology suitable for detecting subtle cross-linguistic variation in context.
- From translation via distribution to linguistic theory.
- No unified category of PERFECT (in European languages) or PERFECTIVE PAST (in a broader typological comparison).
- More fine-grained semantic theory needed, based on competition.
- <http://time-in-translation.hum.uu.nl/>

