UNIVERSITY OF CAMBRIDGE

A parametric analysis of verb movement and non-standard interrogatives in NIDs

Elena Isolani

Table of contents

1. Background

1.1 The Parametric Comparison Method (PCM)

- Methodology developed by Giuseppe Longobardi, Cristina Guardiano and others over the last two decades. (Longobardi, 2003, 2012, 2018; Longobardi & Guardiano, 2009, 2017; Longobardi et al., 2013, 2015; Guardiano & Longobardi 2017; Ceolin et al. 2020 …)

- Takes sets of **syntactic parameters** from different languages as input to computations which output phylogenies/family trees of those languages.

- Longobardi et al. focused on the nominal domain, Baker and Roberts (to appear) on the clausal domain, while this presentation will show a further expansion of this method regarding the functional domain (CP).

- The first step in order to apply this method consists in realising a consistent list of **parameters** regulating the domain under analysis.

- The second in picking up a sample of **languages** to be tested by means of this tool

- Functional parameters are (in theory) **binary.** However, a third value called 0 can also be assigned to some parameters if its value is already determined by the value previously assigned to another parameter.

		TABLE A		Sic	It	Sp	Fr	Ptg	Rm	Grk
1	FGM	± gramm. morphology	FGM	+	+	+	+	+	+	+
2	FGP	± gramm. person +FGM	FGP	+	+	+	+	+	+	+
3	FGN	± gramm. number +FGP	FGN	+	+	+	+	+	+	+
4	GCO	± gramm. collective ¬+FGN	GCO	0	0	0	0	0	0	0
5	FGG	± gramm. gender +FGP	FGG	+	+	+	+	+	+	+
6	NOD	± NP over D +FGP	NOD	-	-	-	-	-	-	-
7	FSN	± feature spread to N +FGN or +GCO, -NOD	FSN	+	+	+	+	+	+	+
8	FNN	± numb. on N +FSN	FNN	+	+	+	-	+	+	+
9	CGB	± gramm. boundedness	CGB	-	-	-	-	-	-	-
10	FIN	± free incorporation +CGB	FIN	0	0	0	0	0	0	0
11	DGR	± gramm. article +FGP	DGR	+	+	+	+	+	+	+
12	CGR	± strong article -CGB, +DGR, ¬-FNN	CGR	+	+	+	0	+	+	+
13	NSD	± strong person (+FGN, ¬+FSN) or +DGR	NSD	+	+	+	+	+	+	+
14	DPQ	± free null partitive Q +FNN, ¬+CGB	DPQ	-	-	-	0	-	-	-
15	DCN	± article-checking N (+FGN, ¬+FSN) or +DGR	DCN	-	-	-	-	-	+	-
16	DOR	± def on relatives +DGR	DOR	-	-	-	-	-	-	-
17	DIN	± D-controlled infl. on N +FSN	DIN	-	-	-	-	-	-	-
18	CPS	± plural spread from cardinals +FSN, ¬+GCO	CPS	+	+	+	+	+	+	+
19	NPA	± numerical (partial) atomizer +FGN, +CGB	NPA	0	0	0	0	0	0	0
20	BAT	± atomizer +NPA, -DGR	BAT	0	0	0	0	0	0	0

Longobardi & Guardiano (2017: 252)

- Generating linguistic phylogeny is possible by calculating the syntactic distance between language pairs.

- The distance between two languages (X, Y) is δ (0 > δ > 1) determined by the following formula for the ordered pair (where i = the number of identities in parameter values and d = the number of differences): *d/(i+d)*

	Eng	Du	Afr	Ger	Sw	Fr	It	EP	Ro	Slo	SBC	Gk	Fi
Eng	0.00	0.21	0.26	0.27	0.22	0.34	0.33	0.29	0.34	0.38	0.39	0.24	0.26
Du	0.21	0.00	0.26	0.12	0.22	0.24	0.26	0.30	0.28	0.41	0.42	0.31	0.34
Afr	0.26	0.26	0.00	0.28	0.27	0.39	0.44	0.42	0.39	0.46	0.47	0.42	0.39
Ger	0.27	0.12	0.28	0.00	0.30	0.26	0.25	0.26	0.20	0.35	0.33	0.27	0.34
Sw	0.22	0.22	0.27	0.30	0.00	0.32	0.34	0.27	0.37	0.45	0.45	0.30	0.29
Fr	0.34	0.24	0.39	0.26	0.32	0.00	0.08	0.16	0.20	0.34	0.32	0.25	0.28
It	0.33	0.26	0.44	0.25	0.34	0.08	0.00	0.12	0.17	0.30	0.29	0.15	0.26
EP	0.29	0.30	0.42	0.26	0.27	0.16	0.12	0.00	0.22	0.29	0.26	0.16	0.27
Ro	0.34	0.28	0.39	0.20	0.37	0.20	0.17	0.22	0.00	0.25	0.24	0.18	0.31
Slo	0.38	0.41	0.46	0.35	0.45	0.34	0.30	0.29	0.25	0.00	0.01	0.28	0.38
SBC	0.39	0.42	0.47	0.33	0.45	0.32	0.29	0.26	0.24	0.01	0.00	0.25	0.36
Gk	0.24	0.31	0.42	0.27	0.30	0.25	0.15	0.16	0.18	0.28	0.25	0.00	0.24
Fi	0.26	0.34	0.39	0.34	0.29	0.28	0.26	0.27	0.31	0.38	0.36	0.24	0.00

Baker & Roberts (2021: 17)

	Ka	Ku	Sic	It	Sp	Fr	Ptg	Rm	Grk	CyG	E	D	Da	Ice	Nor	Blg	SC	Slo	Po	Rus	Ir	Wel	Ma	Hi	Far	Pas	Man	Can	Inu	Jap	Ar	Heb	Hu	Est	Fin	Tur	Bur	cB	wB	Wo
Ka	0	0,406	0,276	0,233	0,233	0,267	0,233	0,226	0,3	0,3	0,3	0,267	0,233	0,233	0,233	0,233	0,226	0,226	0,226	0,226	0,276	0,286	0,314	0,314	0,438	0,367	0,526	0,526	0,29	0,625	0,379	0,276	0,306	0,29	0,294	0,342	0,394	0,417	0,375	0,455
Ku	0,406	0	0,297	0,324	0,351	0,361	0,324	0,342	0,368	0,368	0,342	0,342	0,316	0,368	0,316	0,378	0,359	0,359	0,359	0,359	0,361	0,361	0,3	0,3	0,351	0,275	0,414	0,414	0,312	0,481	0,368	0,417	0,343	0,297	0,297	0,306	0,351	0,324	0,382	0,571
Sic	0,276	0,297	0	0,0208	0,0833	0,0652	0,0625	0,087	0,17	0,17	0,159	0,111	0,111	0,178	0,133	0,128	0,175	0,175	0,15	0,175	0,209	0,214	0,162	0,162	0,333	0,216	0,375	0,375	0,276	0,304	0,273	0,262	0,225	0,243	0,25	0,333	0,371	0,229	0,229	0,312
It	0,233	0,324	0,0208	0	0,06	0,0417	0,04	0,0625	0,184	0,163	0,152	0,106	0,106	0,17	0,128	0,143	0,167	0,19	0,167	0,19	0,233	0,238	0,158	0,158	0,333	0,211	0,36	0,36	0,276	0,304	0,273	0,262	0,214	0,231	0,237	0,324	0,361	0,222	0,222	0,312
Sp	0,233	0,351	0,0833	0,06	0	0,0625	0,02	0,0612	0,22	0,2	0,174	0,128	0,128	0,17	0,149	0,14	0,14	0,163	0,14	0,163	0,205	0,209	0,184	0,184	0,361	0,237	0,4	0,4	0,267	0,25	0,267	0,279	0,262	0,256	0,263	0,353	0,389	0,222	0,222	0,344
Fr	0,267	0,361	0,0652	0,0417	0,0625	0	0,0417	0,109	0,234	0,213	0,182	0,133	0,133	0,156	0,156	0,17	0,195	0,22	0,195	0,22	0,22	0,225	0,184	0,184	0,361	0,243	0,36	0,36	0,31	0,304	0,31	0,3	0,238	0,237	0,243	0,353	0,389	0,222	0,222	0,312
Ptg	0,233	0,324	0,0625	0,04	0,02	0,0417	0	0,0833	0,224	0,204	0,152	0,106	0,106	0,149	0,128	0,163	0,167	0,19	0,167	0,19	0,209	0,214	0,158	0,158	0,333	0,211	0,36	0,36	0,276	0,304	0,295	0,286	0,238	0,231	0,237	0,324	0,361	0,194	0,194	0,312
Rm	0,226	0,342	0,087	0,0625	0,0612	0,109	0,0833	0	0,184	0,163	0,174	0,174	0,104	0,163	0,122	0,118	0,143	0,167	0,167	0,167	0,227	0,233	0,158	0,158	0,333	0,211	0,36	0,36	0,29	0,208	0,234	0,244	0,286	0,231	0,282	0,371	0,361	0,229	0,229	0,344
Grk	0,3	0,368	0,17	0,184	0,22	0,234	0,224	0,184	0	0,0185	0,208	0,204	0,208	0,22	0,188	0,2	0,156	0,133	0,133	0,133	0,227	0,233	0,225	0,225	0,324	0,275	0,37	0,37	0,267	0,375	0,239	0,295	0,256	0,286	0,275	0,343	0,333	0,378	0,378	0,242
CyG	0,3	0,368	0,17	0,163	0,2	0,213	0,204	0,163	0,0185	0	0,188	0,184	0,188	0,2	0,167	0,22	0,133	0,156	0,156	0,156	0,227	0,233	0,225	0,225	0,324	0,275	0,37	0,37	0,267	0,375	0,239	0,295	0,233	0,262	0,25	0,343	0,333	0,351	0,351	0,242
E	0,3	0,342	0,159	0,152	0,174	0,182	0,152	0,174	0,208	0,188	0	0,0612	0,0816	0,122	0,0816	0,208	0,182	0,205	0,205	0,205	0,14	0,143	0,244	0,244	0,216	0,146	0,25	0,25	0,333	0,36	0,31	0,25	0,233	0,214	0,22	0,222	0,231	0,229	0,229	0,294
D	0,267	0,342	0,111	0,106	0,128	0,133	0,106	0,174	0,204	0,184	0,0612	0	0,0816	0,0962	0,0816	0,167	0,128	0,149	0,149	0,17	0,159	0,163	0,225	0,225	0,27	0,175	0,296	0,296	0,31	0,375	0,31	0,25	0,238	0,22	0,2	0,229	0,289	0,257	0,257	0,294
Da	0,233	0,316	0,111	0,106	0,128	0,133	0,106	0,104	0,208	0,188	0,0816	0,0816	0	0,08	0,0385	0,14	0,14	0,163	0,163	0,163	0,205	0,209	0,171	0,171	0,297	0,171	0,214	0,214	0,3	0,32	0,273	0,214	0,233	0,171	0,2	0,278	0,289	0,2	0,2	0,303
Ice	0,233	0,368	0,178	0,17	0,17	0,156	0,149	0,163	0,22	0,2	0,122	0,0962	0,08	0	0,0588	0,12	0,087	0,109	0,13	0,13	0,133	0,136	0,15	0,15	0,243	0,15	0,296	0,296	0,276	0,292	0,25	0,19	0,238	0,171	0,175	0,257	0,289	0,229	0,229	0,235
Nor	0,233	0,316	0,133	0,128	0,149	0,156	0,128	0,122	0,188	0,167	0,0816	0,0816	0,0385	0,0588	0	0,137	0,14	0,163	0,163	0,163	0,205	0,209	0,171	0,171	0,297	0,171	0,214	0,214	0,3	0,32	0,273	0,214	0,233	0,171	0,2	0,278	0,289	0,2	0,2	0,303
Blg	0,233	0,378	0,128	0,143	0,14	0,17	0,163	0,118	0,2	0,22	0,208	0,167	0,14	0,12	0,137	0	0,0909	0,0682	0,0909	0,0682	0,205	0,209	0,175	0,175	0,333	0,175	0,333	0,333	0,258	0,24	0,239	0,205	0,233	0,22	0,225	0,278	0,316	0,257	0,257	0,375
SC	0,226	0,359	0,175	0,167	0,14	0,195	0,167	0,143	0,156	0,133	0,182	0,128	0,14	0,087	0,14	0,0909	0	0,0204	0,0612	0,0408	0,154	0,158	0,195	0,195	0,237	0,195	0,321	0,321	0,226	0,308	0,211	0,222	0,237	0,19	0,171	0,25	0,308	0,242	0,242	0,267
Slo	0,226	0,359	0,175	0,19	0,163	0,22	0,19	0,167	0,133	0,156	0,205	0,149	0,163	0,109	0,163	0,0682	0,0204	0	0,0408	0,0204	0,154	0,158	0,195	0,195	0,237	0,195	0,321	0,321	0,226	0,308	0,211	0,222	0,263	0,214	0,195	0,25	0,308	0,273	0,273	0,267
Po	0,226	0,359	0,15	0,167	0,14	0,195	0,167	0,167	0,133	0,156	0,205	0,149	0,163	0,13	0,163	0,0909	0,0612	0,0408	0	0,0204	0,154	0,158	0,195	0,195	0,237	0,195	0,321	0,321	0,226	0,308	0,211	0,222	0,263	0,214	0,195	0,25	0,308	0,273	0,273	0,267
Rus	0,226	0,359	0,175	0,19	0,163	0,22	0,19	0,167	0,133	0,156	0,205	0,17	0,163	0,13	0,163	0,0682	0,0408	0,0204	0,0204	0	0,154	0,158	0,195	0,195	0,237	0,195	0,321	0,321	0,226	0,308	0,211	0,222	0,263	0,214	0,195	0,25	0,308	0,273	0,273	0,267
Ir	0,276	0,361	0,209	0,233	0,205	0,22	0,209	0,227	0,227	0,227	0,14	0,159	0,205	0,133	0,205	0,205	0,154	0,154	0,154	0,154	0	0	0,25	0,25	0,257	0,194	0,435	0,435	0,357	0,304	0,262	0,214	0,297	0,257	0,265	0,323	0,333	0,312	0,281	0,323
Wel	0,286	0,361	0,214	0,238	0,209	0,225	0,214	0,233	0,233	0,233	0,143	0,163	0,209	0,136	0,209	0,209	0,158	0,158	0,158	0,158	0	0	0,257	0,257	0,235	0,171	0,435	0,435	0,37	0,304	0,268	0,22	0,278	0,235	0,242	0,3	0,312	0,312	0,281	0,323
Ma	0,314	0,3	0,162	0,158	0,184	0,184	0,158	0,158	0,225	0,225	0,244	0,225	0,171	0,15	0,171	0,175	0,195	0,195	0,195	0,195	0,25	0,257	0	0	0,262	0,116	0,25	0,25	0,206	0,259	0,278	0,324	0,2	0,175	0,211	0,214	0,256	0,206	0,206	0,258
Hi	0,314	0,3	0,162	0,158	0,184	0,184	0,158	0,158	0,225	0,225	0,244	0,225	0,171	0,15	0,171	0,175	0,195	0,195	0,195	0,195	0,25	0,257	0	0	0,262	0,116	0,25	0,25	0,206	0,259	0,278	0,324	0,2	0,175	0,211	0,214	0,256	0,206	0,206	0,258
Far	0,438	0,351	0,333	0,333	0,361	0,361	0,333	0,333	0,324	0,324	0,216	0,27	0,297	0,243	0,297	0,333	0,237	0,237	0,237	0,237	0,257	0,235	0,262	0,262	0	0,184	0,259	0,259	0,323	0,36	0,389	0,382	0,222	0,194	0,206	0,167	0,189	0,281	0,344	0,281
Pas	0,367	0,275	0,216	0,211	0,237	0,243	0,211	0,211	0,275	0,275	0,146	0,175	0,171	0,15	0,171	0,175	0,195	0,195	0,195	0,195	0,194	0,171	0,116	0,116	0,184	0	0,258	0,258	0,258	0,222	0,333	0,324	0,167	0,15	0,184	0,135	0,15	0,152	0,152	0,357
Man	0,526	0,414	0,375	0,36	0,4	0,36	0,36	0,36	0,37	0,37	0,25	0,296	0,214	0,296	0,214	0,333	0,321	0,321	0,321	0,321	0,435	0,435	0,25	0,25	0,259	0,258	0	0,0286	0,429	0,333	0,522	0,571	0,24	0,259	0,32	0,231	0,241	0,231	0,269	0,304
Can	0,526	0,414	0,375	0,36	0,4	0,36	0,36	0,36	0,37	0,37	0,25	0,296	0,214	0,296	0,214	0,333	0,321	0,321	0,321	0,321	0,435	0,435	0,25	0,25	0,259	0,258	0,0286	0	0,429	0,333	0,522	0,571	0,24	0,259	0,32	0,231	0,241	0,231	0,269	0,304
Inu	0,29	0,312	0,276	0,276	0,267	0,31	0,276	0,29	0,267	0,267	0,333	0,31	0,3	0,276	0,3	0,258	0,226	0,226	0,226	0,226	0,357	0,37	0,206	0,206	0,323	0,258	0,429	0,429	0	0,348	0,323	0,31	0,229	0,226	0,206	0,189	0,206	0,259	0,333	0,4
Jap	0,625	0,481	0,304	0,304	0,25	0,304	0,304	0,208	0,375	0,375	0,36	0,375	0,32	0,292	0,32	0,24	0,308	0,308	0,308	0,308	0,304	0,304	0,259	0,259	0,36	0,222	0,333	0,333	0,348	0	0,348	0,476	0,381	0,304	0,364	0,364	0,375	0,2	0,24	0,391
Ar	0,379	0,368	0,273	0,273	0,267	0,31	0,295	0,234	0,239	0,239	0,31	0,31	0,273	0,25	0,273	0,239	0,211	0,211	0,211	0,211	0,262	0,268	0,278	0,278	0,389	0,333	0,522	0,522	0,323	0,348	0	0,128	0,359	0,333	0,306	0,424	0,471	0,324	0,324	0,387
Heb	0,276	0,417	0,262	0,262	0,279	0,3	0,286	0,244	0,295	0,295	0,25	0,25	0,214	0,19	0,214	0,205	0,222	0,222	0,222	0,222	0,214	0,22	0,324	0,324	0,382	0,324	0,571	0,571	0,31	0,476	0,128	0	0,351	0,324	0,294	0,355	0,406	0,312	0,281	0,448
Hu	0,306	0,343	0,225	0,214	0,262	0,238	0,238	0,286	0,256	0,233	0,233	0,238	0,233	0,238	0,233	0,233	0,237	0,263	0,263	0,263	0,297	0,278	0,2	0,2	0,222	0,167	0,24	0,24	0,229	0,381	0,359	0,351	0	0,105	0,0952	0,0952	0,184	0,242	0,303	0,344
Est	0,29	0,297	0,243	0,231	0,256	0,237	0,231	0,231	0,286	0,262	0,214	0,22	0,171	0,171	0,171	0,22	0,19	0,214	0,214	0,214	0,257	0,235	0,175	0,175	0,194	0,15	0,259	0,259	0,226	0,304	0,333	0,324	0,105	0	0,0244	0,162	0,146	0,125	0,188	0,37
Fin	0,294	0,297	0,25	0,237	0,263	0,243	0,237	0,282	0,275	0,25	0,22	0,2	0,2	0,175	0,2	0,225	0,171	0,195	0,195	0,195	0,265	0,242	0,211	0,211	0,206	0,184	0,32	0,32	0,206	0,364	0,306	0,294	0,0952	0,0244	0	0,125	0,184	0,167	0,233	0,385
Tur	0,342	0,306	0,333	0,324	0,353	0,353	0,324	0,371	0,343	0,343	0,222	0,229	0,278	0,257	0,278	0,278	0,25	0,25	0,25	0,25	0,323	0,3	0,214	0,214	0,167	0,135	0,231	0,231	0,189	0,364	0,424	0,355	0,0952	0,162	0,125	0	0,075	0,207	0,276	0,385
Bur	0,394	0,351	0,371	0,361	0,389	0,389	0,361	0,361	0,333	0,333	0,231	0,289	0,289	0,289	0,289	0,316	0,308	0,308	0,308	0,308	0,333	0,312	0,256	0,256	0,189	0,15	0,241	0,241	0,206	0,375	0,471	0,406	0,184	0,146	0,184	0,075	0	0,219	0,281	0,393
cB	0,417	0,324	0,229	0,222	0,222	0,222	0,194	0,229	0,378	0,351	0,229	0,257	0,2	0,229	0,2	0,257	0,242	0,273	0,273	0,273	0,312	0,312	0,206	0,206	0,281	0,152	0,231	0,231	0,259	0,2	0,324	0,312	0,242	0,125	0,167	0,207	0,219	0	0,0513	0,333
wB	0,375	0,382	0,229	0,222	0,222	0,222	0,194	0,229	0,378	0,351	0,229	0,257	0,2	0,229	0,2	0,257	0,242	0,273	0,273	0,273	0,281	0,281	0,206	0,206	0,344	0,152	0,269	0,269	0,333	0,24	0,324	0,281	0,303	0,188	0,233	0,276	0,281	0,0513	0	0,333
Wo	0,455	0,571	0,312	0,312	0,344	0,312	0,312	0,344	0,242	0,242	0,294	0,294	0,303	0,235	0,303	0,375	0,267	0,267	0,267	0,267	0,323	0,323	0,258	0,258	0,281	0,357	0,304	0,304	0,4	0,391	0,387	0,448	0,344	0,37	0,385	0,385	0,393	0,333	0,333	0

Longobardi & Guardiano (2017)

1.2 The Parametrization of the CP

- The list of parameters regulating CP has been generated adopting the **cartographic framework** (Rizzi 1997), therefore considering each head of the split - CP

[ForceP [TopP* [IntP [TopP* [FocP [ModP [TopP*[FinP]]]]]]]]

- It can in principle be formulated in terms of **formal features** on functional heads (Borer-Chomsky Conjecture).

- Following Gianollo et al. (2008) four properties related to functional features are the basis of numerous functional parameters: **grammaticalisation**, **checking**, **spreading**, **strength**

- Additional parameters account for further salient patterns of variation encountered in CP.

Parameters	Diagnostics
Pc1 (CLF) Lexicalized FORCE Is Force lexicalized?	+ • (Any) Force feature can be lexicalized via a complementizer, a complementizer resembling a wh-element, a relative operator, certain nouns, verbs etc. • The element lexicalizing Force can be followed by one or more topics and one single focus but cannot be preceded by them. • The positivity of this PC1 makes the following featural specific parameters relevant, while its negativity makes them 0. - • No Force feature is lexicalized
PC2 (CLD) Lexicalized Declarative Is the declarative feature lexicalized?	+ • The declarative feature is lexicalized via a complementizer, a particle, V-to-C movement etc. • Lexicalization through a particle can be incompatible with sentential negation. • The positivity of PC2 makes the following parameters based on checking, strength and spread relevant, its negativity makes them 0-. - • Declarative feature is not lexicalized
PC3 (CSD) Strong Declarative Does declarative feature move from a low position to ForceP?	+ • An element moves from a lower position to Force domain to check [declarative]. This element can be a verb (V2 languages), a complementizer (English), a particle, a clitic (Bellunese) etc. ➢ *English*: same complementizer 'that' is associated with two distinct heads Force and Fin and there is a movement to Force ➢ *SIDs*: languages with a dual complementizer system - • Lexicalization of [declarative] occurs through other operation and not by means of movement.
PC4 (CDC) Declarative Checking Is declarative feature overtly realized in a lower position than ForceP?	+ • The element bearing [+declarative] is an element in a lower position than Force (either in CP or in the IP), but Force° is not able to attract it in its domain, thus is remains in a lower position. ➢ *SIDs*: dual complementizer system • If an element moves from its original position to a higher position still below Force and only in that position it checks [declarative], it is considered a case of checking as well. Therefore, the original position of the element is not a necessary aspect for checking.

- Each parameter is ideintified by a **number** and a **three-letter code**.
- Parameters are ordered in a **top-bottom** fashion following the split-CP projections (Rizzi, 1997).
- A list of **101** parameters has been generated.

1.3 The choice of the languages

- At the current stage, a sample of **26 dialects** has been tested:

  NIDs: *Alto Polesano, Bellunese, Biellese, Cuneese, Friulano, Genovese, Modenese, Romagnolo, Trevisano;* CIDs: *Anconetano, Fiorentino, Maceratese, Maremmano;* SIDs: *Alto Salentino, Abruzzese, Barese, Calabrese (Area Lausberg), Calabrese (Area Greco-Romanza), Cautano, Lucano, Molisano, Neapolitan, Saletino, Sicilian*; Sardo: *Campidanese, Logodurese*

- This is the first attempt to apply the PCM to dialects, rather than to standard languages.

- The objective is to detect **microvariations** between languages that are traditionally close and to provide a more fine-grained classification according to the phenomena involved at the C-layer.

2. The Parametrization of Verb Movement

- In this study, two kinds of verb movement have been formulated: **V-to-Fin** and **V-to-Force** (Wolfe, 2016).

V-to-Force	*V-to-Fin*
Pc1 (CSI) - Strong [F]: Does [F] move from a low position to ForceP?	*Pc3 (CSF) - Strong [F]:* Does [F] move from a low position to FinP?
Pc2 (VFO) - [F] on the verb: Does the verb, carrying [F], move from a low position to ForceP?	*Pc4 (VFI) - [F] on the verb:* Does the verb, carrying [F], move from a low position to FinP?
	Pc5 (RVP) - Residual V2: Is V2 property only realized in embedded clauses?

- It shows the **implications** between parameters.
- It fails to provide an empirical context for V-to-Force.

2.1 Fiorentino: a special case of complementizer deletion

- Italo-Romance varieties legitimize two distinct types of complementizer deletion (Cocchi & Poletto, 2002):
  - **CD1**: main bridge verb + irrealis embedded verb
  - **CD2**: main bridge/non-brdge verb + irrealis/realis embedded verb and intervening clitic-like element

1. Credo (che) sia interessante ascoltarlo. **CD1** – *Italian & Fiorentino*
   I-believe (that) be-SUBJ.PRS.3SG interesting listen-him.
   'I believe (that) it will be interesting to listen to him'

2. Ha detto (che) non ha portato nulla. **CD2** - *Fiorentino*
   he-has said (that) not he-has brought anything
   'He said (that) he did not bring anything'

- Cocchi & Poletto (2002) unify CD1 and CD2 claiming that they both represent instances of **alternative checking**

  - **CD1:** The main verb select a CP-complement bearing [-realis] feature, checked by either the complementizer *'che'* or by the embedded verb moved to CP.
  - **CD2**: The main verb select a CP-complement bearing [±realis] feature, checked by either the complementizer 'che' or by the intervening clitic element moved to CP.

- What strikingly differs between **CD1** and **CD2** is the landing position of verb movement, respectively **FinP** and **ForceP**.

3. Credo Gianni abbia telefonato *Italian & Fiorentino*
   I-think Gianni have-SUBJ.PRS.3SG phoned
   'I think Gianni has phoned'

4. *Maria mi ha detto Gianni un ha portato il libro *Fiorentino*
   Maria to me has said Gianni not has brought the book
   'Maria told me Gianni did not bring the book'

2.1 Fiorentino: a new approach to CD

- In this paper, we are going in a slightly different direction wrt to Cocchi & Poletto (2002), arguing that the clitic-element and the verb form a **unique unit** at the syntactic level.

- Resting on the assumption that CD2 involves clitic movement to Force (Cocchi & Poletto, 2002), **verb movement** along with the clitic need to be hypothesized as well.

- Therefore, CD in Fiorentino could turn into a potential candidate for an empirical context revealing **V-to-Force.**

- Which data can confirm verb movement to Force in Fiorentino?

a. Any left-peripheral element can precede the embedded verb, but hanging topics

5. a. *Mi hanno detto QUATTRO BOTTIGLIE tu hai bevuto — *contrastive focus*
   me they-have told FOUR BOTTLES you-cl. have drunk
   'I have been told that FOUR BOTTLES you have drunk'

   b. Mi hanno detto tu hai bevuto QUATTRO BOTTIGLIE
   me have told you-cl. have drunk FOUR BOTTLES
   'They told that FOUR BOTTLES you have drunk'

6. a. ?? Mi hanno detto a Marco gli telefoni domani — *familiar topic*
   me they-have told to Marco him you-call tomorrow
   'They told me you call Marco tomorrow'

   b. Mi hanno detto gli telefoni domani a Marco
   me have told him you-call tomorrow to Marco
   'They told me you call Marco tomorrow'

7. a. *Mi hanno detto domani ci vai *adverb*
me they-have told tomorrow there you-go
'They told me you will go there tomorrow'

b. Mi hanno detto ci vai domani
me they-have told there you-go tomorrow
'They told me you will go there tomorrow'

8. Mi hanno detto Marco gli telefoni domani *hanging topic*
me they-have told Marco him you-call tomorrow
' They told me you will call Marco tomorrow'

b. Extraction of a DP-object to the embedded CP is grammatical only if an overt subject is missing

9. Ti hanno detto cosa porta? *Extraction to embedded CP*
   you they-have told what he-brings
   'Did they tell you what he brings?'

10. *Ti hanno detto cosa Gianni porta?
    you they-have told what Gianni brings?
    'Did they tell you what Gianni bring?'

c. *Diachronic analysis confirms this trend. In 16th century Italian, CD2 increases (Meszler & Samu, 2009), but it is not possible when a left-peripheral element intervenes between the main and the embedded clause*

12. So non fa di bisogno più replicare questa istoria… *MF 9.24–25*
    know not it-is necessary any more to repeat this story…

13. Tu sai io sono compagnone… *MF 36.23–24*
    You know I am companion…

14. so che per il tempo niuno è venuto drieto a me.. *MF 35.27*
    know that for the time none has followed me

15. Non vedete voi che ogni indì dua votano uno pozzo *MF 12.5-6*
    Not see you that every two days they-empty a well

- Even though some questions remain open like the position of overt subjects or why only certain verbs allow for CD2, these data, which show an extremely poor verbal pre-field in CD2 contexts, seem to validly support **V-to-Force.**

- From the **PCM's** viewpoint, Fiorentino seems to positively label Pc2.

V-to-Force	*V-to-Fin*
Pc1 (CSI) - Strong [F]: Does [F] move from a low position to ForceP?	*Pc3 (CSF) - Strong [F]:* Does [F] move from a low position to FinP?
Pc2 (VFO) - [F] on the verb: Does the verb, carrying [F], move from a low position to ForceP?	*Pc4 (VFI) - [F] on the verb:* Does the verb, carrying [F], move from a low position to FinP?
	Pc5 (RVP) - Residual V2: Is V2 property only realized in embedded clauses?

3. The Parametrization of Complementizer Deletion

PC6 (CCD) Complementizer Deletion Is complementizer deletion attested?	**+** • The complementizer is omitted, regardless of the nature of the main and the embedded verb. • If this parameter is positive, ~~than~~ PC7 and PC8 are relevant. **-** • The complementizer can never be omitted. Therefore, no combination of main and embedded verb is felicitous to have complementizer deletion. • If this parameter is negative, PC7 and PC8 are 0-
PC7 (CDT) Complementizer Deletion 2 Is complementizer deletion attested with both bridge and non-bridge selecting verbs?	**+** • Complementizer deletion is not sensitive to verb type in the main clause. It can be either bridge ~~and~~ a non-bridge verb. ➢ *Florentine*: the selecting verb can be of any type and the embedded verb can be both realis and ~~irrealis~~ • If this parameter is +, then PC8 is 0+. **-** • Complementizer deletion cannot occur with any type of selecting verb. ➢ *Italian*: Only bridge selecting verbs accept complementizer deletion.
PC8: (CDO) Complementizer Deletion 1 Is complementizer deletion only attested with bridge selecting verbs?	• If this parameter is -, Pc8 is relevant **+** • Complementizer deletion is sensitive (at least) to the selecting verb which must be a bridge verb. ➢ Italian • Generally, these varieties also show a preference for the mood of the embedded verb which must be irreal (conjunctive, conditional, future). **-** • Other types of ~~verb~~ can select complementizer deletion (back to PC7)

- Following the PCM, I argue that there is a **parametric implication** between CD1 and CD2 resting on both logical and empirical assumptions.
- From a logical viewpoint, languages like Florentine with CD2 can have complementizer deletion when the selecting verb is both bridge and non-bridge and when the embedded verb encodes both [+realis] and [-realis] features, therefore any time that a language manifests CD2, it must also present CD1.

- If Pc6 is -, Pc7 and Pc8 are 0-
- If Pc6 is +, Pc7 and Pc8 are relevant
- If Pc7 is +, Pc8 is 0+

- These assumptions are further supported by empirical data retrieved from the languages tested.
- Some varieties categorically rule out complementizer deletion in both CD1 and CD2 contexts (Sicilian, Alto Polesano, Neapolitan, Campidanese etc.), while other varieties present both (Fiorentino).
- However, there is no variety in my knowledge that displays CD2, but not CD1, upholding hence the view that there is a **parametric implication** between CD1 and CD2.

4. The Parametrization of NSIs

- For NSIs, we indicate some interrogative structures that are not uttered in out-of-the-blue contexts, but that require a **specific semantic/pragmatic context** in order to be felicitous.

- More than two decades of literature on this topic, provided the following classification for NSIs. (Munaro & Obenauer, 1999; Obenauer & Poletto, 2000; Obenauer, 2012; Hinterholzl & Munaro, 2021)

  - **Surprise-Disapproval** Interrogative
  - **Rhetorical** Interrogatives
  - **Can't-find-the-value-of-X** Interrogative

- In this presentation, I intend to offer an alternative view of NSIs under the lens of the PCM and I will test their different realization in three dialects spoken in Veneto: *Bellunese*, *Trevisano* and one variety of *Polesano*.

Surprise-Disapproal	*Rhetorical*	*Can't-find-the-value-x*
Pc16 *(SDQ) - Surpise/Disapproval* Are they syntactically realized in the same way as SI?	***Pc20*** *(CRI) Rhetorical Interrogatives* Are they syntactically realized in the same way as SI?	***Pc24*** *(CFI) Can't-find-the-value* Are they syntactically realized in the same way as SI?
Pc17 (SDP): Surprise/Disapproval and a discourse particle Do they need a discourse particle?	*Pc21 (RIP) Rhetorical and a discourse particle* Do they need a discourse particle?	*Pc25 (CFP) Can't-find-the value and a discourse particle* Do they need a discourse particle?
Pc18 (SDC) Surprise/Disapproval in a cleft structure. Are realized through cleft structures?	*Pc22 (RIC) Rhetorical in a cleft structure.* Are they realized through cleft structures?	*Pc26 (CFC) Can't-find-the-value in a cleft structure.* Are they realized through cleft structures?
Pc19 *(SDM) Surprise/Disapproval and wh-movement.* Are realized with wh-movement to a fronted position?	***Pc23*** *(RIM) Rhetorical and wh-movement* Are they realized with wh-movement to a fronted position?	***Pc27*** *(CFM) Can't-find-the-value and wh-movement* Are they realized with wh-movement to a fronted position?

4.1 Results from three Veneto dialects

- **Alto Polesano**:

- For the three types of NSI, the **same structure** with a fronted wh-item is realized.

16. Cosa magni-to? *standard interrogative*
    what eat-you-cl.
    'What do you eat?'

17. Dove ve-to vestìa cussì? *surprise/disapproval interrogative*
    where go-you-cl. dressed like that?
    'Where are you going dressed like?'

➢ **Bellunese**:

- It behaves like Alto Polesano in the realization of surprise/disapproval interrogatives, but it differs from it in rhetorical and can't-find-the-value-x interrogatives.

- This means that whether e SI is always realized with a wh-item in-situ, the **movement of wh-pronoun** is attested when a NSI of the surprise/disapproval or can't-find-the-value-x type is produced

18. Si-to drio andare andé? *standard interrogative & surprise/disapproval interrogatives*
    are-you-cl behind go where?
    'Where are you going?'

19. Quando lo è diventa vegetariano (*quando)? *rhetorical interrogative*
    when him-cl is become vegetarian?
    'When did he become vegetarian?'

➢ **Trevisano**:

- For the three types of NSIs, the wh-item must be necessarily **fronted**, contrary to the respective SIs which can be formulated with the wh-item either in-situ or ex-situ.

20. Chi ga-tu visto (chi)? *standard interrogative*
    who have-you-cl. seen (who)?
    'Who did you see?'

21. Quando se-o deventa vegetariano (*quando)? *rhetorical interrogative*
    when is-he-cl. become vegetarian (*when)?
    'When did he become vegetarian?'

22. Dove a-tu trova' e ciave (*dove)? *can't-find-the-value-x interrogative*
    where have-you-cl. found the key (*where)?
    'Where did you find the key?'

3.2 Discussion

- From the PCM perspective, the parameter schemata that can be released is the following

	ALTO POLESANO	BELLUNESE	TREVISANO
Pc16 (SDQ)	**+**	**+**	**+**
Pc17 (SDP):	-	-	-
Pc18 (SDC)	-	-	-
Pc19 (SDM)	**-**	**-**	**+**
Pc20 (CRI)	**+**	**-**	**+**
Pc21 (RIP)	-	-	-
Pc22 (RIC)	-	-	-
Pc23 (RIM)	**-**	**+**	**+**
Pc24 (CFI)	**+**	**-**	**+**
Pc25 (CFP)	-	-	-
Pc26 (CFC)	-	-	-
Pc27 (CFM)	**-**	**+**	**+**

- The syntactic distances calculated in pairs of languages between Alto Polesano, Trevisano, and Bellunese are as follows:

  - Alto Polesano – Bellunese: **0.19**
  - Alto Polesano – Trevisano: **0.22**
  - Bellunese – Trevisano: **0.13**

- Even though the syntactic distances fall in a range that confirms their belonging to the **same language family**, Bellunese and Trevisano seem closer/more related with respect to Polesano.

- Does the realization of NSIs affect these results?

- Having a closer look at the assignment of the overall values, it is possible to observe that:
  - Bellunese and Trevisano are more reluctant to accept movement towards the CP (focus fronting, left-dislocation).
  - Trevisano is event stricter as it does not even allow topic dislocation to the left of an exclative wh-pronoun.
  - Alto Polesano is, rather, more ‘chilled’ with respect to movement.
  - The only kind of movement that is accepted in Bellunese and Trevisano is restricted to wh-movement in NSI.

- Bellunese and Trevisano are more syntactically related due to their more typical **rejection** of any kind of syntactic movement within the structure.

- Alto Polesano is more distant to them, but closer to other less strict varieties that accept syntactic movement.

- The realization of NSIs provides a confirmation of a more similar pattern between Bellunese and Trevisano rather than Alto Polesano which plays a role in the final calculation of the syntactic distance.

- Considering solely this phenomenon, it is possible to establish a **continuous configuration** between the three varieties analysed: while Alto Polesano and Bellunese are at the extreme edges, with the former realizing NSIs in the same way as SIs and the latter showing opposite operations, Trevisano is found in an intermediate position.

- From the micro-parametric analysis of there Veneto dialects, it is possible to conclude that the PCM continues to be a promising methodology for establishing **linguistic relations.**

5. Conclusions

- The PCM is an innovative tool that attempts to offer an alternative lens to investigate **language taxonomy**.
- This method benefits from the fact that it can be **expanded** both in terms of the languages under analysis and in terms of the syntactic domain investigated.
- This research is, indeed, the result of the application of the PCM to the functional domain in order to test Italo-Romance varieties.
- This test has permitted the creation of specific parameters that derive from the assignment of other parametric values. The choice of non-standard languages is productive as it allows to define **micro-parameters** that are relevant only if **syntactically close languages** are taken into account.

4. References

Baker, J. & Roberts, I. (to appear). Extending Parametric Comparison: Some Preliminary Results. In P. Crisma & G. Longobardi (eds.), Handbook of historical and diachronic linguistics. Oxford: Oxford University Press.

Ceolin, A., Guardiano, C., Irimia, M.-A., Longobardi G. (2020) Formal Syntax and Deep History. Frontiers in Psychology 11.

Cocchi, G., & Poletto, C. (2002). Complementizer Deletion in Florentine: the interaction between Merge and Move. In C. Beyssade, R. Bok-Bennema, F. Drijkoningen & P. Monachesi (Eds), Romance Languages and Linguistic Theory 2000: Selected papers from 'Going Romance' 2000, Utrecht, 30 November–2 December (pp 57-76). John Benjamins Publishing Company.

Guardiano, C., & Longobardi, G. (2017). Parameter theory and parametric comparison. In I. Roberts (ed.), The Oxford Handbook of Universal Grammar (pp. 377–400). Oxford: Oxford University Press.

Hinterhölzl, R., & Munaro, N. (2021). On the illocutionary force of exclamatives and noncanonical questions in German and Italian. In A. Trotzke & X. Villalba, Expressive Meaning Across Linguistic Levels and Frameworks (pp. 43-65). Oxford: Oxford University Press.

Longobardi, G. (2003). Methods in parametric linguistics and cognitive history. Linguistic Variation Yearbook 2003, 3, 101–138.

Longobardi, G. (2018). Principles, Parameters, and Schemata: A radically underspecified UG. Language and Linguistic Science, 41 (3-4), 517-558.

Longobardi, G., & Guardiano, C. (2009). Evidence for syntax as a signal of historical relatedness. Lingua, 119(11), 1679-1706.

Longobardi, G., Guardiano, C., Silvestri, G., Boattini, A. & Ceolin, A. (2013). Toward a Syntactic Phylogeny of Modern Indo-European Languages. Journal of Historical Linguistics 3, 122-152.

Longobardi, G., Ghirotto, S., Guardiano, C., Tassi, F., Benazzo, A., Ceolin, A. & Barbujani, G. (2015). Across language families: Genome diversity mirrors linguistic variation within Europe. American Journal of Physical Anthropology 157, 630-640.
Meszler, L. & Samu B. (2009). Che-deletion in Old Italian and Middle Florentine. In K. Bočková Loudová & M. Žáková (eds), Early European Languages in the Eyes of Modern Linguistics (pp.213-228). Masaryk University Press.
MF – Motti e facezie del Piovano Arlotto. G. Folena (ed.), Milan – Naples, 1995.
Munaro, N., & Obenauer, H. (1999). On Underspecified Wh-elements in Pseudointerrogatives. University Of Venice Working Papers In Linguistics, 9(1-2), 181-25.
Obenauer, H. (2012). Nonstandard wh-questions and alternative checkers in Pagotto. In H. Lohnstein, S. Trissler & H. Obenauer, The Syntax and Semantics of the Left Periphery (pp. 343-384). Berlin, Boston: De Gruyter Mouton.
Obenauer, H., & Poletto, C. (2000). Rhetorical Wh-Phrases in the Left Periphery of the Sentence. University Of Venice Working Papers In Linguistics, 10(1), 121-151.
Rizzi, L. (1997). The Fine Structure of the Left Periphery. In L. Haegeman, Elements of Grammar (pp. 281–337). Dordrecht: Springer.
Wolfe, S. (2016). On the left periphery of V2 languages: evidence from romance Fin and Force periphery V2 systems. In Rivista di Grammatica Generativa 38: Selected Papers from the 41st Incontro di Grammatica Generativa 38, 287–310.