

Simulated Segment Evolution using the TKF91 Model

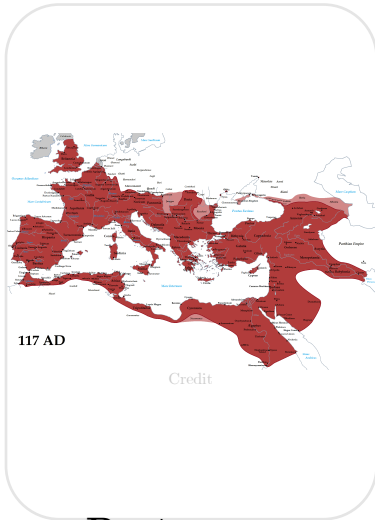
John Huelsenbeck

Introduction

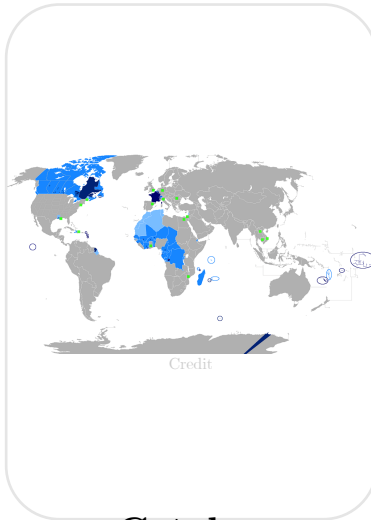
In this paper, we attempt to do the impossible!

Languages

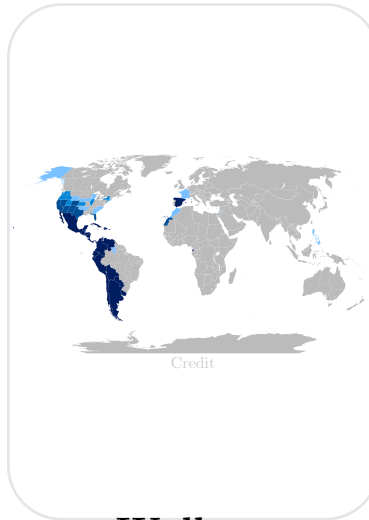
Latin



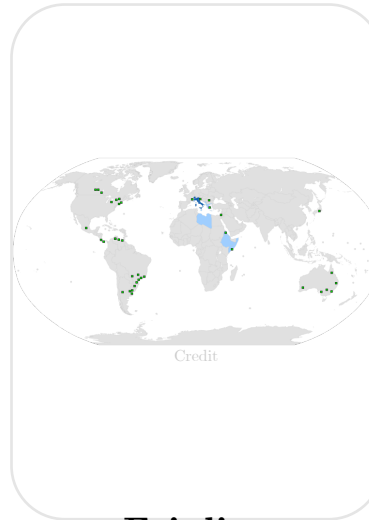
French



Spanish



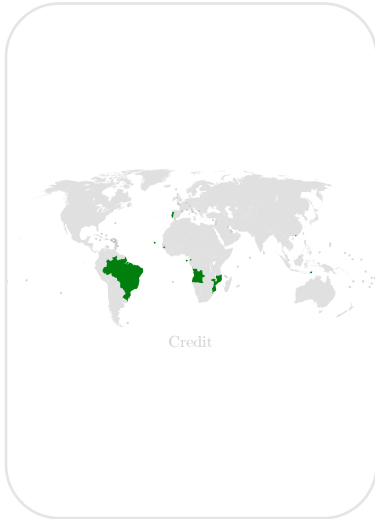
Italian



Brazilian Portuguese



Portuguese



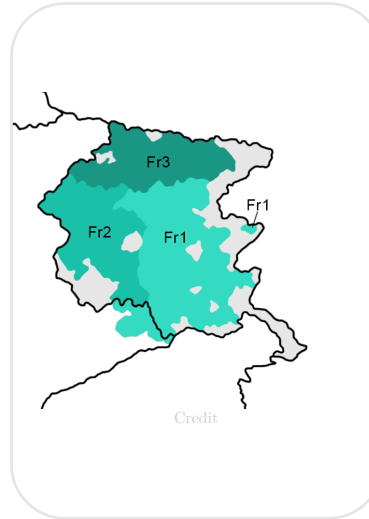
Catalan



Walloon



Friulian

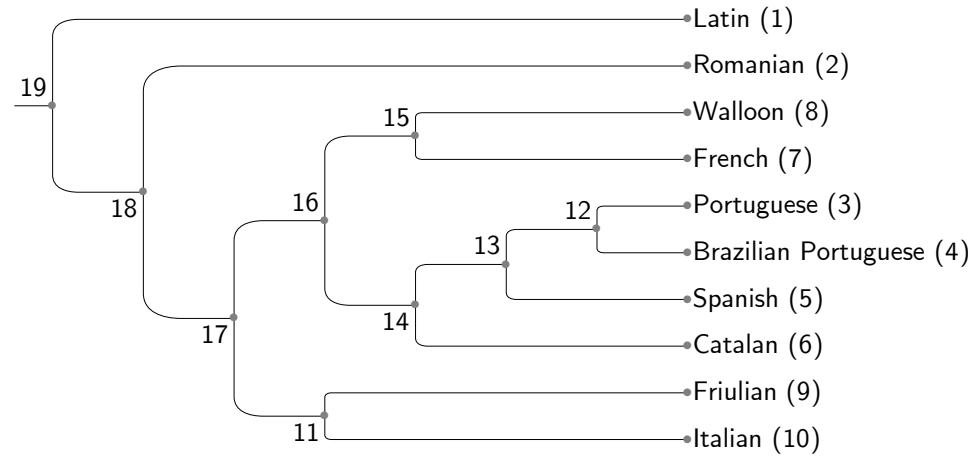


Romanian



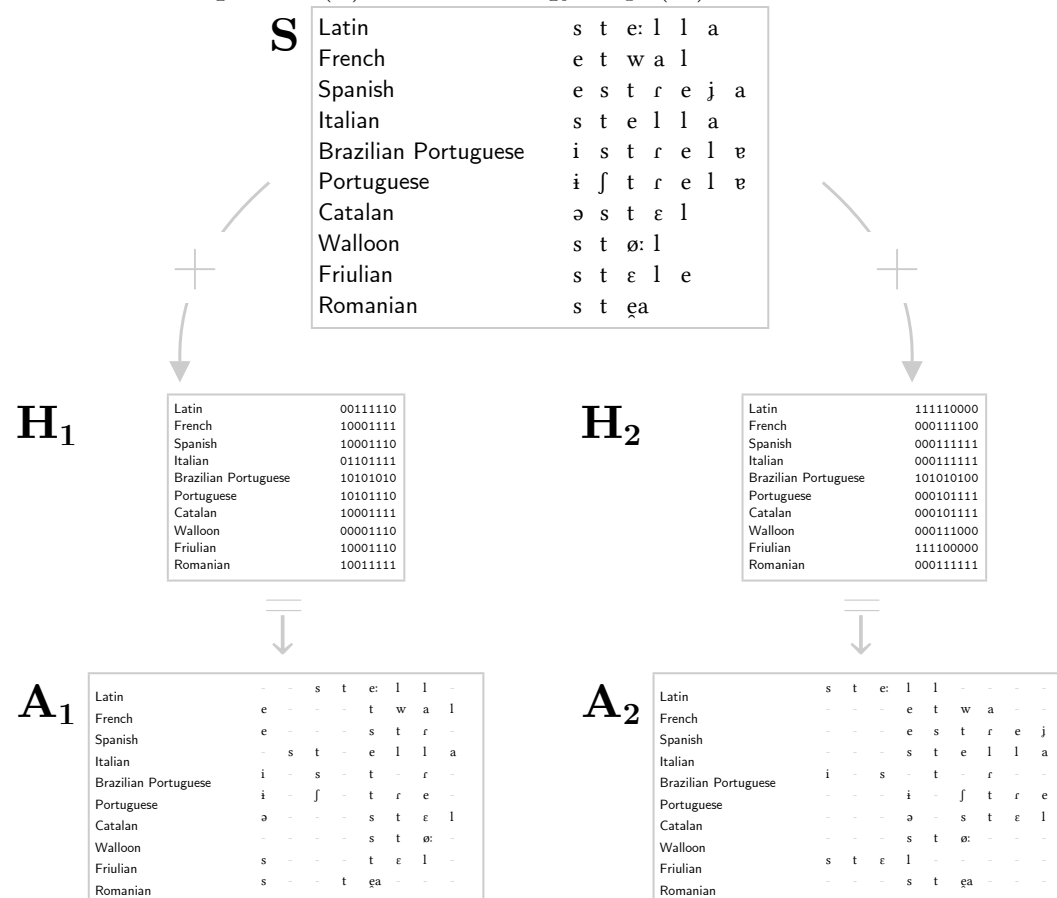
Example Tree

An example tree showing the relationships of $N = 10$ languages.



Alignment

Alignments (**A**) are formed from the observed segments (**S**) and a homology map (**H**).



Character Assignments

Each segment gets a different number

0	e	1	g	2	o:	3	ʒ	4	ə	5	j	6	o	7	i	8	w	9	ɔ	10	dʒ	11	ɪ	12	j	13	k ^w	14	s
15	k	16	i:	17	m	18	n	19	ẽj	20	ẽj	21	ɸj	22	d	23	a	24	ɪ	25	ɛ	26	ɛ:	27	ɸj				
28	ã	29	ẽ	30	u	31	t	32	ẽ	33	u:	34	œ	35	ũ	36	õ	37	ɳ	38	ø	39	oj	40	ɸ				
41	ø:	42	aj	43	ɐ	44	r	45	e:	46	ɾ	47	ɑ	48	ɹ	49	ej	50	ẽ	51	θ	52	ĩ	53	g	54	ɳ		
55	l	56	õ	57	ʎ	58	ɣ	59	a:	60	p	61	ã	62	ɐj	63	h	64	b	65	v	66	z	67	x				
68	β	69	ɛa	70	ɸ	71	ð	72	y	73	ɾ	74	ɔa	75	ɸ	76	c	77	ts	78	ɸ	79	ɛj	80	f				
81	g ^w	82	ẽɸ																										

Partition Assignments

David's basic rules

1 Nasal Vowel

ã ẽ ĕ œ ù õ ė ĭ ã ã

2 Vowel

e o: ə o ĭ ɔ ɪ i: ĕ ĭ a ĭ ε ε: u u: ø oʝ ø: aʝ ɐ e: ɑ ej a: ɐj ɛa y ɔa ɛj ĕu

3 Consonant Group 1

w j m n r l

4 Consonants

g ʒ ʝ ɟ k^w s k tʃ d ʈ t ɳ ʃ ɰ ɾ θ g ɲ ʎ ɣ p h b v z x β ʝ ǰ ɾ ɰ c ts ʈ f g^w

Maximum Clade Credibility

0

Changes per Branch

Questions

