

# Understanding Language Evolution Using an Event-Based Model

## Appendices

1. Character Assignments
2. Partition Assignments
3. Concepts Used
4. Results

## Appendix 1 - Character Assignments

---

Each segment gets a different number

1	e	2	g	3	o:	4	ʒ	5	ə	6	j	7	o	8	i	9	w	10	ɔ	11	dʒ	12	ɪ	13	j
14	n	15	s	16	u	17	ʃ	18	oj	19	v	20	b	21	t	22	u:	23	y	24	d	25	f		
26	e:	27	m	28	a	29	ɾ	30	ɐ	31	œ	32	ɛ	33	l	34	r	35	x	36	ʌ	37	ɤ		
38	i:	39	ɲ	40	ɔa	41	h	42	ẽj	43	ɔ̃	44	ã	45	ĩ	46	ẽ	47	ɸ	48	ɨ	49	p		
50	z	51	ð	52	k	53	ts	54	a:	55	ẽj	56	ɾ	57	aj	58	ɛ:	59	θ	60	ej				
61	ɐj	62	õ	63	ɥ	64	ø:	65	c	66	g	67	ɬ	68	ɛj	69	ø	70	ɛa	71	k <sup>w</sup>				
72	ɣ	73	ẽ	74	ɳ	75	g <sup>w</sup>	76	ẽɥ	77	ɑ	78	β	79	ɸ	80	ẽ	81	ɔ:	82	ũ	83	ɭ		
84	ç	85	ɑ:	86	ĩ	87	œ	88	au	89	ɯ	90	ẽw												

## Model: “Linguistically Informed”

ẽ ĩ ã ĭ ẽ ẽĩ õ ẽ ẽũ ẽ ũ œ ẽw

e o: ə o i ɔ ɪ u oɪ u: y e: a ɐ œ ɛ i: ʊɑ i: a: aɪ ɛ: eɪ ɐj ø: ɛj ø ɛɑ ɑ ɔ: ɑ: aʊ ʊ

## n m n n j

## w j l r

g z j d s f v b t d f r x ʌ ʁ h ʈ p z ʁ k t s r θ ɥ c g ɫ k<sup>w</sup> ɣ g<sup>w</sup> β ʃ ɹ ɕ

## Appendix 3 - Concepts Used

	I	We	YouPlural	YouSingular
Latin	- e g o:	n o: - s -	w o: - s	t u:
French	3 ə - -	n u - -	v u - -	t y
Spanish	j - - o	n o - s -	b o - s	t u
Italian	i - - o	n o: i - -	v o: i -	t u
PortugueseBrazi	- e - w	n ɔ j - s	v ɔ j s	t u
Portuguese	- e - w	n ɔ - ʃ -	v o - ʃ	t u
Catalan	3 - - ɔ		b u - s	t u
Walloon	ɔ̃ r - -	n o - -	v o - s	t y
Friulian	j - - o	n o: - -	v o: -	t u
Romanian	j e - w	n oj - -	v oj - -	t u
	YouSingular-VostramMerc	Woman	Woman-Mulier	Woman-Domina
Latin		f e: - m i - n - a	m u l i e r e m	d o m i n a
French		f a - m - - - -		d a m - - -
Spanish	- u s t e d	- e - m - b r - a	m u x - e r - -	d o - - ɲ a
Italian		f e m m i - n - a	m o ʎ ʎ e - - -	d ɔ n - n a
PortugueseBrazi	v o s - e -	f e - m e - - - e	m u ʎ - e ʁ - -	d o - - n e
Portuguese	v ɔ s - e -	f e - m j - - - e	m u ʎ - e r - -	d o - - n e
Catalan	v o s t e -	f e - m - b r - a	m u ʎ - e - - -	d ɔ - - n ə
Walloon		f œ - m - - - -		d œ m - - -
Friulian		f ε - m i - n - ε	m u - - i: r - -	d ɔ - - n e
Romanian		f e - m e - - j e	m u - j e r e -	d ɔ a m - n ə
	ManHumanBeing	ManHumanBeing-Homo	Child	Child-Ninnus
Latin	h o m i - n e m	- h o m o:	i n f a n t e m	
French	- ɔ m - - - -	- ɔ̃ - - -	ā - f ā - - -	
Spanish	o m - b r e - -		i n f a n t e -	n i ɲ o
Italian		w ɔ m o -	- - f a n t e -	n i n o
PortugueseBrazi	o m ẽj - - - -		ĩ - f ẽ - ʃ i -	n e n ẽj
Portuguese	ɔ m ẽj - - - -		ĩ - f ẽ - t i -	n e n ẽj
Catalan	- ɔ m ə - - - -			n e n -
Walloon	- ɔ m - - - -		ε - f ā - - - -	
Friulian	- ɔ m - - - -			
Romanian	- o m - - - -			
	Wife	Wife-Mulier	Husband	Husband-Sponsus
Latin	- s p o n s a	m u l i e r -	m a r i: t u s	- s p o n s u s
French	e - p u - z -		m a ʁ i - - -	e - p u - - -
Spanish	e s p o - s a	m u x - e r -	m a r i ð o -	e s p o - s o -
Italian	- s p ɔ - z a	m o ʎ ʎ e - -	m a r i t o -	- s p ɔ - z o -
PortugueseBrazi	i s p o - z a	m u ʎ - e ʁ -	m a r i d u -	i s p o - z u -
Portuguese	i ʃ p o - z e	m u ʎ - e r -	m e r i ð u -	i ʃ p o - z u -
Catalan	ə s p ɔ - z ə	m u ʎ - e - -	m a r i t - -	ə s p ɔ - s - -
Walloon				
Friulian		m u - i: r - -	m a r i: t - -	- s p o: - s - -
Romanian		m u - j e r e	m ə r i t - -	

## Appendix 3 - Concepts Used

	Husband-Socius	Mother	Father	Father-Tata
Latin	s o k i u s	m a: t r e m	p a t r e	t a t a
French		m e - ʁ - -	p e - ʁ - -	
Spanish		m a ð r e -	p a ð r e	t a t a
Italian	s ɔ ʧ - o -	m a: d r e -	p a: d r e	t a t a
PortugueseBrazi		m ẽj - - -	p aj - - -	t a t a
Portuguese		m ẽj - - -	p aj - - -	t a t a
Catalan		m a - r ə -	p a - r ə	
Walloon		m e - ʁ - -	p ɛ: - r -	
Friulian		m a - r i -	p a - r i	
Romanian	s o t s - - -			t a t ə
	Animal	Animal-Bestia	Fish-Piskem	Fish-Pescion
Latin	a n i m a l i a	b e: s t i a	p i s k e m	
French	o - - m a - j			p w a s ɔ
Spanish	a l i m a ɲ - a		p e θ - - -	
Italian		b i ʃ f - a	p e ʃ f e -	
PortugueseBrazi		b i - ʃ - ɐ	p ej ʃ - i -	
Portuguese		b i - ʃ - ɐ	p ɐj ʃ - i -	
Catalan			p e ʃ - - -	
Walloon				p - ɛ h ɔ
Friulian	n e m a: l - - -	b i s - - -	p ɛ s - - -	
Romanian	- n ə m a - j e		p e ʃ t e -	
	Bird-Avem	Bird-Avicellum	Bird-Passerem	Louse
Latin	a w e m	- a w i - k - e l l u m	p a s s e r e m	p - e d u - k l u s
French		w a - - - z - o - - -		p - u - - - - -
Spanish	a b e -		p a - x a r o -	p j o - - x - o - -
Italian		- - u - t ʧ - ɛ l l o -	p a s s e r o -	p - i d ɔ k k j o -
PortugueseBrazi	a v i -		p a - s ɐ r u -	p - i - o - ʎ u - -
Portuguese	a v i -		p a - s ɐ r u -	p - i - o - ʎ u - -
Catalan	a w - -	- - u - - s - e - ʎ - -		p - o - - - ʎ - - -
Walloon		- - u: - - h - ɛ: - - -		p j u - - - - -
Friulian		- - u - - ʧ j ɛ - l - -		p - e d o - l i - -
Romanian			p a - s ə r e -	p - ə d u k - j e -
	Fruit	Flower	Nose	Nose-Nares
Latin	f r u: - k t u s	f l o: r e m	n a: s u s	
French	f ʁ ɥ i - - -	f l œ ʁ - -	n e - - -	
Spanish	f r u - - t o -	f l o r - -	n a s o -	n a r i θ -
Italian	f r u - t t o -	f j o: r e -	n a: s o -	n a r i ʧ e
PortugueseBrazi	f r u - - t ɐ -	f l o ʁ - -		n a r i s -
Portuguese	f r u - - t ɐ -	f l o r - -		n ɐ r i ʃ -
Catalan	f r u j - t - -	f l ɔ - - -	n a s - -	n a: r i s -
Walloon	f ʁ y - - - -	f l ø ʁ - -	n e - - -	
Friulian	f r u - - t - -	f l o: r - -	n a: s - -	
Romanian	f r u - k t - -	f l ɔ a r e -	n a s - -	

## Appendix 3 - Concepts Used

	Mouth	Mouth-Gula	Sun	Sun-Soliculus
Latin	b u k k a	g u l a	s o: l e m	s o l i k u l u s
French	b u - ʃ -			s ɔ l ɛ j - - - -
Spanish	b o - k a		s o l - -	
Italian	b o k k a		s o l e -	
PortugueseBrazi	b o - k ɐ		s ɔ w - -	
Portuguese	b o - k ɐ		s ɔ ʔ - -	
Catalan	b o - k ə		s ɔ l - -	
Walloon	b ɔ k - -		s ɔ l ɔ -	
Friulian	b ɔ - c ɛ			s o r e - - l i -
Romanian	b u - k ə	g u r ə	s ɔ a r e -	
	Moon	Star	Water	Rain
Latin	l u: n a	- s t - e: l l a	a - k <sup>w</sup> - a	p l u - w i a
French	l y n -	e - t w a - l -	o - - - -	p l ɥ - - i -
Spanish	l u n a	e s t r e - j a	a - ɣ w a	j - u - b j a
Italian	l u n a	- s t - e l l a	a k k w a	p j o d ɔ - a
PortugueseBrazi	l u - ɐ	i s t r e - l ɐ	a - g w ɐ	ʃ - u - v - ɐ
Portuguese	l u - ɐ	i ʃ t r e - l ɐ	a - g w ɐ	ʃ - u - v - ɐ
Catalan	ʎ u n ə	ə s t - ɛ - l -	aj - ɣ w ə	p l u - ʒ - ə
Walloon	l ø n -	- s t - ø: - l -	ɛ: - - w -	p l u: - ɤ - -
Friulian	l u n e	- s t - ɛ - l e	a - g - e	p l o - - j e
Romanian	l u n ə	- s t - ɛ a - - -	a - p - ə	p l ɔ a - - j e
	Lake	Sea	Salt	Earth
Latin	l a k u m	m a r e	s a: l e m	t - e r r a
French	l a k - -	m ɛ ɤ -	s ɛ l - -	t - e - ɤ -
Spanish	l a g o -	m a r -	s a l - -	t j e - r a
Italian	l a g o -	m a r e	s a l e -	t - ɛ r r a
PortugueseBrazi	l a g u -	m a ɤ -	s a w - -	t - e - ɤ ɐ
Portuguese	l a ɣ u -	m a r -	s a l - -	t - ɛ - ɤ ɐ
Catalan	ʎ a k - -	m a r -	s a l - -	t - ɛ - r ə
Walloon	l a k - -	m e ɤ -	s e - - -	t - ɛ: - ɤ -
Friulian	l a: t - -	m a: r -	s a: l - -	t j ɛ - r e
Romanian	l a k - -	m a r e	s a r e -	ts - a - r ə
	Fog	Fog-Nebula	Fog-Tenebrae	Fog-Tenebras
Latin	k a: l i: g i n e m	n - e - b u l a	t e n e: b r a j	t - e n - e: b r a: s
French		n j ɔ - - l y		t - e n - ɛ b ɤ - -
Spanish	k a l i - - n a -	n j e - b - l a		t - i n j e b l a s
Italian	k a l i ɔ i n e -	n - e b b - j a	t ɛ: n e b r e	t - ɛ: n - e b r e -
PortugueseBrazi	k a l i ʒ ɛ j - - -	n - ɛ - v w - ɐ		
Portuguese	k ɐ l i ʒ ɛ j - - -	n - ɛ - v w - ɐ		t r - - - ɛ v - ɐ ʃ
Catalan		n - e - - w l ə		t - ə n - e b r ə s
Walloon				
Friulian				
Romanian		n e g u r ə - -		

## Appendix 3 - Concepts Used

	Fog-Fumata	Fog-Caecia	Sky	Wind
Latin	f u:m a:t a	k a:j k i:a	k - a:j l u m	w - e n t u m
French	f y m e - -		s j ε l - -	v - ã - - -
Spanish	f u m a t a		θ j e l o -	b j e n t o -
Italian	f u m a:t a		ʃ - ε l o -	v - ε n t o -
PortugueseBrazi	f u m a s e		s - ε w - -	v - ě - t u -
Portuguese	f u m a s e		s - ε w - -	v - ě - t u -
Catalan			s - ε l - -	b - e n - - -
Walloon			s - i: ʁ - -	v - ě - - -
Friulian	f u m a t e		ʃ - i: l - -	v - i n t - -
Romanian		ʃ e a ʃ - ə	ʃ - e r - -	v - i n t - -
	Fire-Focus	Year	Name-Nomen	Name-Nominem
Latin	f - o k u m	a n n u m	n o:m e n	n o:m i n - e m
French	f - ø - - -	ã - - -	n ã - - -	
Spanish	f w e g o -	a - ɲ o -		n o m - b r e -
Italian	f w ɔ k o -	a n n o -	n o:m e -	
PortugueseBrazi	f - o g u -	e - n u -	n o m i -	
Portuguese	f - o ɣ u -	e - n u -	n o m i -	
Catalan	f - ɔ k - -	a - ɲ - -	n ɔ m - -	
Walloon	f - ø: - - -	ã - - -	n ò - - -	
Friulian	f - u: k - -	a - ɲ - -	n ɔ ɲ - -	
Romanian	f - o k - -	a n - - -	n u m e -	
	Tongue	ToDrink	ToEat	ToEat-Manducare
Latin	l i n g <sup>w</sup> - a	b i b - e r e	k o m e d e r e	m a n d u k a: r e
French	l ã - g - -	b - - w a ʁ -		m ã - ʒ - - e - -
Spanish	l e ɲ g w a	b e b - e r -	k o m e - - r -	m a n d u k a r -
Italian	l i n g w a	b e - - - r e		m a n d ʒ - - a r e
PortugueseBrazi	l i - g w e	b e b - e ʁ -	k o m e - - - -	m ě - ʒ - - a ʁ -
Portuguese	l i - g w e	b i β - e r -	k u m - - e r -	m ě - ʒ - - a r -
Catalan		b ε w - - r ə		m ə ɲ ʒ - - a - -
Walloon	l ě ɥ - - -	b - - - ø: ʁ -		m a ɲ - - - i: - -
Friulian	l ε n g - ε	b e v i - - -		m a ɲ ʃ - - a: - -
Romanian	l i m b - ə	b - - - ɛ a - -		m i n - - k a - -
	ToBite	ToBite-Morsicare	ToSuck	ToSpit
Latin	m - o r d e: r e	m o r s i k a: r e	s u: g e r e	k o n s p u e r e
French	m - o ʁ d - ʁ -		s y s e - -	k ã - s p y e - -
Spanish	m - o r ð e r -	m o - s - k a r -		
Italian	m - ɔ r d e r e	m o r s i k a r e		
PortugueseBrazi	m - o ʁ d e ʁ -	m u - s ə g a - -	s u g a ʁ -	k u - s p i ʁ - -
Portuguese	m - u r ð e r -	m u - s ə g a r -	s u g a r -	k u - ʃ p i r - -
Catalan		m u - s ə ɣ a - -		
Walloon			s y s i: - -	
Friulian	m w a r d i - -		c u c a: - -	
Romanian		m u r s e k a - -	s u ɕ e - -	

## Appendix 3 - Concepts Used

	To Spit-Exconspuere	To Spit-Sputare	To Know	To Know-Sapere
Latin		- s p u t e r e	s k i : r e	s a p - e r e
French				s a v w a ʁ -
Spanish	e s k u - p i r	e s p u t a r -		s a b - e r -
Italian		- s p u t a r e		s a p - e r e
PortugueseBrazi				s a b - e ʁ -
Portuguese				s ɐ b - e r -
Catalan	ə s k u - p i -			s ə β - ε - -
Walloon				s a v - ø : ʁ -
Friulian		s p u d a : - - -		s a v - e : - -
Romanian	- s k u j p a -		ʃ t i - -	
	To Know-Cognoscere	To Think	To Think-Pensare	To Fear
Latin	k o g n o : s k e r e	k - o : g i t a : r e	p e : n s a : r e	t i m e : r e
French	k ɔ - n ε - t ʁ - -	k ʁ - - i d e - -	p ɑ̃ - s e - -	
Spanish	k o - n o θ e r - -	k w - - i d a r -	p e n s a r -	t e m e r -
Italian	k o - n o f f e r e	k - o dʒ i t a r e	p e n s a r e	t e m e r e
PortugueseBrazi	k o - ɲ e s - e ʁ -	k - u ʒ i t a ʁ -	p ẽ - s a ʁ -	t e m e ʁ -
Portuguese	k u - ɲ i s - e r -	k - u ʒ i t a r -	p ẽ - s a r -	t i m e r -
Catalan	k u - n ε f - ə - -	k - u - j d a - -	p ə n s a - -	t e m ə - -
Walloon	k i - n ɔ h - - -		p ẽ - s e - -	
Friulian	k o - ɲ o s - i - -		p e ŋ s a : - -	t e m i - -
Romanian	k u - n ɔ a f t e - -	k - u dʒ e t a - -	p ə - s a - -	t e m e - -
	To Fear-Tremere	To Sleep	To Live	To Die
Latin	t r e m - e r e	d - o r m i : r e	w i : w e r e	
French	k ʁ ẽ - d - ʁ -	d - ɔ ʁ m i ʁ -	v i v - ʁ -	m u ʁ i ʁ -
Spanish	t r e m - e r -	d - o r m i r -	b i b i r -	m o r i r -
Italian	t r e m - a r e	d - o r m i r e	v i v e r e	m o r i r e
PortugueseBrazi	t r e m - e ʁ -	d - o ʁ m i ʁ -	v i v e ʁ -	m o ʁ e ʁ -
Portuguese	t r i m - e r -	d - u r m i r -	v i v e r -	m u ʁ e r -
Catalan		d - u r m i - -	b i w - r ə	m u r i - -
Walloon		d w a ʁ m i - -		m ɔ r i - -
Friulian	t r i m - a : - -	d - u r m i : - -	v i v i - -	m u r i : - -
Romanian		d - o r m i - -	v i - a - -	m u r i - -
	To Kill	To Kill-Adnecare	To Kill-Tutari	To Kill-Mactare
Latin	n - e k a : r e		t u : - t a : r i	m a k t a : r e
French	n w a j e - - -		t - ʁ - e - -	m a - t e - -
Spanish		a - n e g a r -		m a - t a r -
Italian		a n n e g a r e		
PortugueseBrazi				m a - t a ʁ -
Portuguese				m ɐ - t a r -
Catalan	n - ə g a - -			m ə - t a - -
Walloon			t u w - e - -	
Friulian				m a f - a : - -
Romanian	n - e k a - -			



## Appendix 3 - Concepts Used

	ToKill-Occidere	ToFight	ToFight-Battuere	ToHunt-Captiare
Latin	o k k i : d e r e	p u g n a : r e	b a t t u e r e	k a p t i a : r e
French	ɔ k s i - - ʁ -		b a t - - ʁ - -	ʃ a - s - e - -
Spanish		p u - ɲ a r -	b a - t - i r -	k a - θ - a r -
Italian	u t tʃ i d e r e	p u ɲ n a r e	b a t t - e r e	k a t tʃ - a r e
PortugueseBrazi			b a - t - e ʁ -	k a - s - a ʁ -
Portuguese			b ɐ - t - e r -	k ɐ - s - a r -
Catalan	u k s i - - - -	p u - ɲ a - -	b a - t - - r ə	k ə - s - a - -
Walloon			b a t - e - - -	tʃ ɛ - s - i : - -
Friulian			b a t - i - - -	c a - tʃ - a : - -
Romanian	u - tʃ i d e - -		b a t - e - - -	
	ToHit	ToCut	ToCut-Curtare	ToCut-Excurtare
Latin	p u l s a : r e	s - e k a : r e	k u r t a : r e	e k s k u r t a : r e
French	p u - s e - -	s j e - - - -		e - - k u ʁ t e - -
Spanish	p u - x a r -	s - e g a r -	k o r t a r -	
Italian	p u l s a r e	s - e g a r e		- - - s k o r t a r e
PortugueseBrazi	p u - f a ʁ -	s - e g a ʁ -	k o ʁ t a ʁ -	
Portuguese	p u - f a r -	s - i ɣ a r -	k u r t a r -	
Catalan		s - ə ɣ a - -		
Walloon				
Friulian	p u l s a : - -	s - e - a : - -		- - s k u r t a : - -
Romanian	p u l s a - -			- - s k u r t a - -
	ToCut-Taliare	ToSplit	ToSplit-Scindere	ToSplit-Findere
Latin	t a : - l i a : r e	d i : w i d e r e	s k i n d e r e	f i n d e r e
French	t a j - - e - -		s - ɛ̃ - d e - -	f ã - d - ʁ -
Spanish	t a - x - a r -	d i b i d i r -		- e n d e r -
Italian	t a - ʎ ʎ a : r e	d i v i d e r e	ʃ - i n d e r e	f ɛ n d e r e
PortugueseBrazi	t a - ʎ - a ʁ -	ɔ̃ i v i ɔ̃ i ʁ -		f ẽ - d e ʁ -
Portuguese	t ɐ - ʎ - a r -	d i v i ð i r -		f ẽ - d e r -
Catalan	t ə - ʎ - a - -	d i b i d i - -		f ɛ n d - r ə
Walloon	t ɛ - - j i : - -			f ẽ - t - - -
Friulian	t a - - j a : - -	d i v i d i - -		
Romanian	t ə - - j a - -	d i v i d e - -		
	ToSplit-Partire	ToSplit-Separare	ToStab	ToStab-Iugulare
Latin	p a r t i : r e	s e : p a r a : r e -	p - u n g e r e	j u g u l a : r e
French	p a ʁ t i ʁ -	s ə - v - - - ʁ e	p w ɛ̃ - d - ʁ -	ʒ y g y l e - -
Spanish	p a r t i r -	s e p a r a r - -		
Italian	p a r t i r e	s e p a r a r e -	p - u n ɔ̃ e r e	j u g u l a : r e
PortugueseBrazi	p a ʁ tʃ i ʁ -	s e p a r a ʁ - -	p - ũ - ʒ i ʁ -	
Portuguese	p ɐ r t i r -	s i p ɐ r a r - -	p - ũ - ʒ i r -	
Catalan	p ə r t i - -	s ə p ə r a - - -	p - u ɲ - i - -	
Walloon	p ɔ : ʁ t i - -			
Friulian	p a r t i : - -	s e p a r a : - - -		
Romanian		s e p a r a - - -	p u n ɔ̃ e - - -	

## Appendix 3 - Concepts Used

	ToScratch	ToScratch-Rasare	ToScratch-Rasicare	ToScratch-Coctiare
Latin	r a : d e r e			
French		ʁ a z e - -		
Spanish	r a - e r -	r a s a r -	r a s k a r	
Italian	r a d e r e	r a s a r e		
PortugueseBrazi	ʁ a - e ʁ -	ʁ a z a ʁ -	ʁ a ʃ k a ʁ	k o s a ɹ
Portuguese	ʁ e - e r -	ʁ e z a r -	ʁ e ʃ k a r	k u s a r
Catalan	r a w - r ə	r ə z a - -	r ə s k a -	
Walloon				
Friulian	r a d a : - -	r a s a : - -		
Romanian	r a d e - -			
	ToDig	ToDig-Cavare	ToDig-Excavare	ToSwim
Latin	f o d e r e	k a w a : r e	e k s k a w a : r e	n - a t a : r e
French	f w i ʁ - -			
Spanish		k a b a r -	e s k a b a r - -	n - a d a r -
Italian		k a v a r e	- - s k a v a r e	n w o t a r e
PortugueseBrazi		k e v a ʁ -	i - ʃ k e v a ʁ -	n - a d a ʁ -
Portuguese		k e v a r -	i - ʃ k e v a r -	n - e ð a r -
Catalan		k ə b a - -		n - ə d a - -
Walloon		ç a : v - l e		
Friulian		ʃ a v a : - -	- - z ʃ a v a : - -	n - a d a : - -
Romanian				
	ToSwim-Navigare	ToFly	ToFly-Exvolare	ToWalk
Latin	n a v i g a : r e	w o l a : r e		
French	n a - - z e - -	v o l e - -		ʃ ə m i n e - - -
Spanish	n a b e g a r -	b o l a r -		k a m i n a r - -
Italian	n a v i g a r e	v o l a r e	z v o l a r e	k a m m i n a r e
PortugueseBrazi	n a v i ɣ a ʁ -	v o - a ʁ -		k e m i ɲ a ʁ - -
Portuguese	n e v i ɣ a r -	v w - a r -		k e m i ɲ a r - -
Catalan	n ə b ə g a - -	b u l a - -		k ə m i n a - - -
Walloon	n ε - - dʒ i : - -	v ə l e - -		ʃ i m i n e - - -
Friulian	n a v i g a : - -		z v o l a : - -	c a m i n a : - - -
Romanian	n a v i g a - -		z b u r a - -	
	ToWalk-Marcher	ToWalk-Mergere	ToWalk-Ambitare	ToCome
Latin		m e r g e r e	a m b i t a : r e	w e n i : r e
French	m a ʁ ʃ e			v ə n i ʁ -
Spanish			a n d - - a r -	b e n i r -
Italian		m e r dʒ e r e	a n d - - a r e	v e n i r e
PortugueseBrazi			ẽ - d - - a ʁ -	v - - i ʁ -
Portuguese			ẽ - d - - a r -	v - - i r -
Catalan				b ə n i - -
Walloon	m a : ʀ ʃ i :			v i n i - -
Friulian				v i ɲ i : - -
Romanian		m e r dʒ e - -		v e n i - -

## Appendix 3 - Concepts Used

	ToLieAsInABed	ToLieAsInABed-lacere	ToSit	ToSit-Sedentare
Latin	e k s t e n d e r e	j a - k e : r e	s - e d e : r e	s e d e n t a : r e
French	e - t ā - d - ɣ - -	ʒ e - z i ɣ -	s w a - - ɣ -	
Spanish	e k s t e n d e r -	j a - θ e r -	s - e - - r -	s e - - n t a r -
Italian	e - s t e n d e r e	ʒ a - ʃ e : r e	s - e d e r e	
PortugueseBrazi	i s t ē - d e ɣ - -	ʒ e - z e ɣ -	s - e - - ɣ -	s ē - - - t a r -
Portuguese	i ʃ t ē - d e r - -	ʒ e - z e r -	s - e - - r -	s ē - - - t a r -
Catalan	ə - s t e n d - r ə	ʒ a w - - r ə		
Walloon		ʒ e - - r e -		
Friulian		j e - s i - -		s e - - n t a : - -
Romanian	e k s t i n d e - -	z ə - ʃ ɛ a - -	ʃ - e d ɛ a - -	
	ToStand	ToStand-Levare	ToStand-Altiare	ToTurnIntransitive
Latin	- s t a : r e	l e v a : r e	- a l t i a : r e	t o r n a : r e
French	ε - t - ɣ -	l ə v e - -	- o - s - e - -	t u ɣ n e - -
Spanish	e s t a r -	j e b a r -	- a l θ - a r -	t o r n a r -
Italian	- s t a r e	l e v a r e	- a l t s a r e -	t o r n a r e
PortugueseBrazi	i ʃ t a r -	l e v a ɣ -	- a ʎ s - a - -	t o ɣ n a ɣ -
Portuguese	i ʃ t a r -	l i v a r -	- a ʎ s - a r -	t u r n a r -
Catalan	ə s t a - -	ʎ ə b a - -	- ə l s - a - -	t u r n a - -
Walloon	ε s - - -	l ə v e - -	h ɔ : - s - i : - -	t u : r n e - -
Friulian	- s t a : - -	l e v a : - -	- a l t ʃ - a : -	t o r n a : - -
Romanian	- s t a - -	l - u a - -		t u r n a - -
	ToTurnIntransitive-Gyrate	ToTurnIntransitive-Ancestr	ToTurnIntransitive-Torquer	ToFall
Latin	g y r a : r e		t o r k <sup>w</sup> e : r e	k - a d e r e
French	ʒ i ɣ e - -	v i ɣ e - -	t ɔ ɣ d - ɣ -	ʃ w a - - ɣ -
Spanish	x i r a r -	b i r a r -	t o r θ e r -	k - a - e r -
Italian	ʒ i r a r e	v i r a r e	t ɔ r ʃ e r e	k - a d e r e
PortugueseBrazi	ʒ i r a r -	v i r a r -	t u r s e r -	k - e - i r -
Portuguese	ʒ i r a r -	ʒ i r a r -	t u r s e r -	k - e - i r -
Catalan	ʒ i r a - -	b i r a - -	t ɔ r s ə - -	k - a w - r ə
Walloon		v i ɣ e - -		ʃ - ε : - - ɣ -
Friulian	ʒ i r a : - -	ʒ i r a : - -		ʃ j a d e - -
Romanian			t ɔ a r ʃ e - -	k ə d ɛ a - -
	ToFall-Tumbare	ToHold	ToHold-Segurar	ToSqueeze
Latin		t e n - e : r e		e k s p r i m - e r e
French	t ō - b e -	t ə n - i ɣ -		e - - p ɣ ē - d - ɣ -
Spanish	t u m b a r	t e n - e r -	s e g u r a r	e k s p r e m - i r -
Italian		t e n - e r e		- - s p r e m - e r e
PortugueseBrazi	t ō - b a ɣ	t e - - - ɣ -	s i g u r a ɣ	i - ʃ p r ə m - e ɣ -
Portuguese	t ō - b a r	t e - - - r -	s i ɣ u r a r	i - ʃ p r ə m - e r -
Catalan	t u m b a -	t ə n - i - -		ə - s p r e m - ə - -
Walloon	t u m - e -	t i n - i - -		
Friulian		t i n j i - -		e - s p r i m - i - -
Romanian		t s i n - e - -		- s k - r e m e - - -

## Appendix 3 - Concepts Used

	ToSqueeze-Serrere	ToSqueeze-Serare	ToSqueeze-Appetorare	ToSqueeze-Stringere
Latin	s e r r e r e	s e - r a r e	a p p e k t o r a : r e	- s t r i n g e r e
French		s e - ʁ e - -		e - t ʁ ē - d - ʁ -
Spanish	s e - r a r -	θ e - r a r -	a - p - - r e t a r -	e s t r e ɲ - i r -
Italian		s e r r a r e		- s t r i n d͡ʒ e r e
PortugueseBrazi	s e - ʁ a - -	s i - ʁ a r -	e - p i - r - t a r -	ə ʃ t r i - ʒ i r -
Portuguese	s ə - r a r -	s i - ʁ a r -	e - p i - r - t a r -	ə ʃ t r i ʒ i r - -
Catalan	s ə - r a - -			ə s t r ε ɲ ə - - -
Walloon		s ε - ʁ e - -		s t r i n g e - - -
Friulian				s t r ε n g i - - -
Romanian				s t r i n d͡ʒ e - - -
	ToRub	ToRub-Exfricare	ToRub-Frictare	ToRub-Frictiare
Latin	f r i k a : r e		f r i k t a : r e	
French	f ʁ ej e - - -		f ʁ o t e - - -	
Spanish	f r e g a r -		f r o t a r - -	f r i s a r
Italian	f r e g a r e		f r e t t a r e	
PortugueseBrazi		i f f r i g a r		
Portuguese		i f f r i ɣ a r		
Catalan	f r ə g a - -			f r ə s a -
Walloon	f r oj - - -		f ʁ o t e - - -	
Friulian	f r e - a - -			
Romanian	f r e k a - -			
	ToWash	ToWipe	ToWipe-Extergere	ToWipe-Exsucare
Latin	l a w a : r e	t e r g e r e	e k s t e r g e r e	e k s - u : k - a : r e
French	l a v e - -			e - s ʊ i - j e - -
Spanish	l a β a r -		e - s t a r s i r -	e n x - u g - a r -
Italian	l a v a r e	t ε r d͡ʒ e r e		a ʃ ʃ - u g - a r e
PortugueseBrazi	l e v a r -			ẽ - ʃ - u g - a r -
Portuguese	l e v a r -			ẽ - ʃ - u ɣ - a r -
Catalan	ʎ ə b a - -		ə - s t ə r ʒ i - -	ə - ʃ - u g a - - -
Walloon	l a v e - -			- - s - u - w e - -
Friulian	l a v a : - -			- - s - u - j a : - -
Romanian	l a - - -		- - ʃ t e r d͡ʒ e - -	u - s - - k - a - -
	ToWipe-Limpidare	ToPull	ToPull-Pulsare	ToPull-Trahere
Latin	l i m p i d a : r e	t i r a : r e	p u l s a : r e	t r a h e r e
French		t i ʁ e - -	p u - s e - -	t ʁ - - ε ʁ -
Spanish	l i m p j - a r -	t i r a r -	p u - x a r -	
Italian		t i r a r e	p u l s a r e	t r a r - r e
PortugueseBrazi	l i - p - - a r -	ʃ i r a - -	p u - ʃ a r -	t r a z e - -
Portuguese	l i - p - - a r -	t i r a r -	p u - ʃ a r -	t r e z e r -
Catalan		t i r a - -		t r ε w - r ə
Walloon		t i r e - -	p u : s i : - - -	
Friulian		t i r a : - -	p u l s a : - -	t r a j - - -
Romanian			p u l s a - -	t r a d͡ʒ e - -

## Appendix 3 - Concepts Used

	ToPush	ToThrow	ToThrow-Lanceare	ToThrow-Eruncare
Latin	i m p i n g e r e	j a k t a r e	l a n k e a r e	e : r u n k a r e
French		ʒ ə - t e - -	l ă - s - e - -	
Spanish		- e - ʃ a r -	l a n θ - a r -	a - r a n k a r -
Italian	i m p i n d e r e	ʒ e t t a r e	l a n ʃ a r e -	a r r o n ʃ a r e
PortugueseBrazi		ʒ e j t a r - -	l ẽ - s - a - -	
Portuguese		ʒ e j t a r - -	l ẽ - s - a r -	
Catalan	ə m p ε n - ə - -	x i t a - - -	ʎ ə n s - a - -	
Walloon		ʒ ε t e - - -	l a n c - i - -	
Friulian			l a n ʃ a - - -	
Romanian	i m p i n d e - -			a - r u ŋ k a - -
	ToTie	ToTie-Aptare	ToSew	ToCount
Latin	l i g a r e	a p t a r e	k o : n - s u e r e	k o m p u t a r e
French	l i - e - -		k u - d - - ʁ -	k ɔ̃ - - - t e - -
Spanish	l e g a r -	a - t a r -	k o - - s - e r -	k o n - - t a r -
Italian	l e g a r e		k u - - ʃ - i r e	k o n - - t a r e
PortugueseBrazi		ẽ - t a r -	k u - - z - e r -	k ɔ̃ - - - t a r -
Portuguese		ẽ - t a r -	k u - - z - e r -	k ɔ̃ - - - t a r -
Catalan	ʎ i γ a - -		k u - - z - i - -	k u m - - t a - -
Walloon	l ɔ j i : - -		k ø : - - z - - -	k ɔ̃ - - - t e - -
Friulian	l e - a : - -		k u - - z i - - -	k o n - - t a - -
Romanian	l e g a - -		c ɔ a - - s - e - -	
	ToCount-Enumerare	ToSay	ToSay-Exponere	ToSing-AncestralClass
Latin	e : n u m e r a r e	d i : k e r e	e k s p o : n e r e	k a n t a r e
French	e n u m e ʁ e - -	d i - - ʁ -		ʃ ă - t e - -
Spanish	e n u m e r a r -	d e θ i r -		k a n t a r -
Italian	e n u m e r a r e	d i - - r e	- - s p o r - r e	k a n t a r e
PortugueseBrazi	e n u m e r a r -	d i z - e r		k ẽ - t a r -
Portuguese	e n u m e r a r -	d i z - e r		k ẽ - t a r -
Catalan	e n u m e r a - -	d i - - -		k ə n t a - -
Walloon		d i : - - ʁ -		ʃ ă - t e - -
Friulian		d i : - - -		c a n t a : - -
Romanian	- n u m a r a - -	z i ʃ e - -	- - s p u n e - -	k i n t a - -
	ToPlay-Ludere	ToPlay-Jiicare	ToFloat	ToFloat-Flutare
Latin	l u : d e r e	j o - k a r e	f l u : k t u a r e	f l u i t a r e
French		ʒ - w - e - -	f l y k t ɥ e - -	
Spanish	l u d i r -	x u - g a r -	f l u g t w a r -	
Italian		ʒ o - k a r e	f l u t t u a r e	f l u i t a r e
PortugueseBrazi		ʒ o - g a ʁ -	f l u - t u a ʁ -	
Portuguese		ʒ u - γ a r -	f l u - t u a r -	
Catalan		ʒ u - g a - -	f l u k t u a - -	
Walloon		ʒ u w - e - -		
Friulian		ʒ u j - a : - -		
Romanian		ʒ u - k a - -	f l u c t u a - -	

## Appendix 3 - Concepts Used

	ToFlow	ToFlow-Colare	ToFlow-Excurrere	ToFlow-Currere
Latin	f l u e r e	k o : l a : r e	e k s k u r r e r e	k u r r e r e
French	f l y e - -	k u l e - -		k u - ɣ i ɣ -
Spanish	f l u i r -	k o l a r -	e - s k u r i r - -	k o - r e r -
Italian	f l u i r e	k o l a r e	- - s k o r r e r e	k o r r e r e
PortugueseBrazi	f l w i ɣ -	k o - a ɣ -	i - ʃ k o - ɣ e ɣ -	k o - ɣ e ɣ -
Portuguese	f l w i r -	k u - a r -	i - ʃ k u - r e r -	k u - ɣ e r -
Catalan	f l u i - -	k u ɫ a - -	ə - s k o - r ə - -	k o - r ə - -
Walloon		k ə l e - -		
Friulian			- - s k o - r i : - -	k o - r i - -
Romanian			- - s k u r ɟ e - -	k u r ɟ e - -
	ToFreeze	ToFreeze-Glaciare	ToFreeze-Inglaciare	ToBurn-Brojan
Latin	g e l a : r e	g l a - k i a : r e	i n g l a k i a : r e	
French	ʒ ə l e - -	g l a - s - e - -		b ɣ y l e - -
Spanish	- e l a r -			
Italian	ɟ e l a r e	g j a t ʃ j a r e		b r u ʃ a r e
PortugueseBrazi	ʒ i l a r -			
Portuguese	ʒ i l a r -			
Catalan	ʒ ə l a - -	g l ə - s - a - -		b ɣ u : l e - -
Walloon	ɟ a l e - -			b r u z a : - -
Friulian		g l a - ʃ - a : - -		
Romanian			i n g - e t s - a - -	
	ToBurn-Cremare	ToBurn-Flammare	ToBurn-Ardere	ToBurn-Flagrare
Latin	k r e m a : r e	f l a m m a : r e	a r d e : r e	f l a g r a : r e
French	k ɣ a m e - -	f l ɑ̃ - b e - -	a ɣ d - ɣ -	f l a g ɣ e - -
Spanish	k - e m a r -	f l a - m e a r	a r d e r -	f l a g r a r -
Italian	k r e m a r e	f j a m m a r e	a r d e r e	f l a g r a r e
PortugueseBrazi	k - ɐ j m a r e		a ɣ d e ɣ -	f l a g ɣ a ɣ -
Portuguese	k - ɐ j m a ɣ e		ɐ r d e r -	f l a g r a r -
Catalan	k r ə m a - -	f ɫ a m a - - -		
Walloon				
Friulian				
Romanian			a r d e - -	
	ToBurn-Incendere	ToBurn-AncestralClass8	All	All-Totus
Latin	i n k e n d - e r e	u s t u l a : r e	o m n e : s	t o : - t u s
French	ẽ - s ɑ̃ - d j e - -			t u - - -
Spanish	e n θ e n d - e r -			t o - d o -
Italian	i n ʃ ɛ n d j a r e	u s t o l a r e	o n n i -	t u t t o -
PortugueseBrazi	i - s e n ɟ i a r -			t o - d u -
Portuguese	ĩ - s ẽ - d j a r -			t o - ɔ̃ u -
Catalan	ə n s e n d - - r ə			t o - t - -
Walloon				t ə - - -
Friulian				d u - t - -
Romanian	i n ʃ i n d ʒ e - -	u s t u r a - -		t o - t - -

## Appendix 3 - Concepts Used

	Many	Many-Tantus	Some	Few
Latin	m u l t u s	t a n t u s		p a u k u s
French	m u - - -		o - k œ - -	p ø - - -
Spanish	m u - ʎ o -	t a n t o -	a l g u n o	p o k o -
Italian	m o l t o -	t a n t o -	a l k u n o	p ɔ k o -
PortugueseBrazi	m ũ ʝ - t u	t ě - t u -	a w g ũ - -	p o w k u
Portuguese	m ũ ʝ - t u	t ě - t u -	a ʎ g ũ - -	p o w k u
Catalan	m o l - - -	t a n t - -	ə l g u - -	p ɔ k - -
Walloon				p ɔ̃ - - -
Friulian	m o l c - -	t a n c - -		p o: k - -
Romanian	m u l t - -			
	Other	Other-Alius	Big	Big-Grandem
Latin	a l t e r -	a l i u s	m a g n u m	g r a n d e m
French	o - t - ʁ -			g ʁ ã - - -
Spanish	o - t - r o		m a - ɲ o -	g r a n d e -
Italian	a l t - r o		m a ɲ ɲ o -	g r a n d e -
PortugueseBrazi	o w t - r u	a w - - -		g r ĩ - ɔ̃ i -
Portuguese	o w t - r u	a ʎ - - -		g r ĩ - d i -
Catalan	a l t - r ə			g r a n - - -
Walloon	ô - t - - -			g ʁ ã - - -
Friulian	a l t - r i			g r a n t - -
Romanian	a l t - - -			
	Big-Majorem	Long-Longum	Long-Largum	Wide
Latin	m a j j o r e m	l o - n g u m	l a r g u m	l a t u m
French		l ɔ̃ - - - -	l a ʁ ʒ - -	l e - - -
Spanish		l o - n g o -	l a r ʝ o -	l a t o -
Italian		l u - n g o -	l a r g o -	l a t o -
PortugueseBrazi		l ɔ̃ - g u - -	l a ʁ g u -	l a t u -
Portuguese		l ɔ̃ - g u - -	l a r g u -	l a t u -
Catalan		ʎ o - ɲ - - -	ʎ a r k - -	
Walloon		l ɔ̃ - - - -		
Friulian		l u n k - - -	l a r k - -	
Romanian	m a - - - r e	l u n g - - -	l a r g - -	l a t - -
	Wide-Amplum	Heavy	Heavy-Lurdus	Heavy-Pesant
Latin	a m p l u m	g r a w i s	l u r d u s	p e: s a n t -
French	ã - p l - -	g ʁ a v - -	l u ʁ - - -	p ə z ã - - -
Spanish	a n ʎ - o -	g r a b e -	l e r d o -	p e s a - ð o
Italian	a m p j o -	g r ε v e -	l o r d o -	p e s a n t e
PortugueseBrazi	ẽ - ʃ - u -	g r a v i -	l e r d o -	p e z a - d u
Portuguese	ẽ - ʃ - u -	g r a v i -	l e r d o -	p i z a - ð u
Catalan	a m p l ə -	g r e w - -		p ə z a - t -
Walloon		g r a v - -		
Friulian		g r ε v i -		p e z a n t -
Romanian		g r e w - -		

## Appendix 3 - Concepts Used

	Small	Small-Pittinus	Small-Pitulus	Short
Latin	p i t t i t u s	p i t t i n u s	p i - t u l u s	k u r t u s
French	p ə - t i - - -			k u ʁ - - -
Spanish		p e - k e ɲ o -		k o r t o -
Italian		p i t t i n o -	p i k k o l o -	k o r t o -
PortugueseBrazi		p e - k e n u -		k u ʁ t u -
Portuguese		p i - k e n u -		k u r t u -
Catalan	p ə t i t - - -			k u r t - -
Walloon	p i - t i - - -			k u: ʁ - - -
Friulian			p i - t t u l - -	k u r t - -
Romanian		p u - t s i n - -		
	Short-Brevis	Narrow	Narrow-Strictus	Thin
Latin	b r e w i s	a n g u s t u s	- s t r - i - k t u s	m i n u: - t u s
French	b ʁ ε f - -		e - t ʁ w a - - - -	m ə n y - - -
Spanish	b r e b e -	a n g o s t o -	e s t r - e - - t t o -	m e n u - d o -
Italian	b r ε v e -	a n g u s t o -	- s t r - e - t t o -	m i n u - t o -
PortugueseBrazi	b r ε v i -		i s t r - e j - - t u -	m i - u - d u -
Portuguese	b r ε v i -		i f t r - ɐ j - - t u -	m i - u - ð u -
Catalan	b r e w - -		ə s t r - ε - - t - -	m ə n u - t - -
Walloon	b ʁ ε f - -		- s t ʁ - ø: - - - -	m i n u - - - -
Friulian			- s t r - ε - - t - -	m i n u: - t - -
Romanian		i ŋ g u s t - -	- s t r - i m - t - -	m ə r u n t - -
	Thin-Delicatus	Thin-Subtilis	Red	Red-Russus
Latin	d e: l i k a: t u s	s u b t i: l e m	r u b e r -	r u s s u s
French	d u: - - ʒ e: - - -			ʁ u - - - -
Spanish	d e l - ɣ a ð o -	s u - t i l - -		r o - x o -
Italian	d e l i k a t o -	s o t t i l e -	r u b - r o	r o s s o -
PortugueseBrazi	d e w - g a d u -	s u - t t i w - -		ʁ o - ʃ u -
Portuguese	d ε l - ɣ a ð u -	s u - t t i w - -		ʁ o - ʃ u -
Catalan	d ə l i k a t - -	s u p t i l - -		r o - s - -
Walloon		s u: - t i - - -		
Friulian		s u - t i: l - -		r o - s - -
Romanian		s u b t s i r e -		r o - ʃ u -
	Red-Vermiculus	Red-Rubeus	Green	One
Latin	v e r m i k u l u s	r u - b e u s	w i r i d e m	u: n u m
French	v ε ʁ m ε j - - - -	ʁ u - ʒ - - -	v e ʁ - - - -	œ - - -
Spanish	b e r m e x o - - -	r u - b j o -	b e r - d e -	u n o -
Italian	v e r m i λ - λ o -	r o b b j o -	v e r - d e -	u n o -
PortugueseBrazi	v e ʁ m e - - λ u -	r u - b e o -	v e r - d i -	ũ - - -
Portuguese	v i r m ε j - - λ u -	r u - b e o -	v e r - d i -	ũ - - -
Catalan	b ə r m ε - - λ - -	r u - d ʒ e - -	v ε r - t - -	u n - - -
Walloon		r o - t t - - -	v ε ʁ - - - -	ō - - -
Friulian		r o - t t - - -	v ε r - t - -	u ŋ - -
Romanian		r o j - b - - -	v e r - d e -	u n u -



## Appendix 3 - Concepts Used

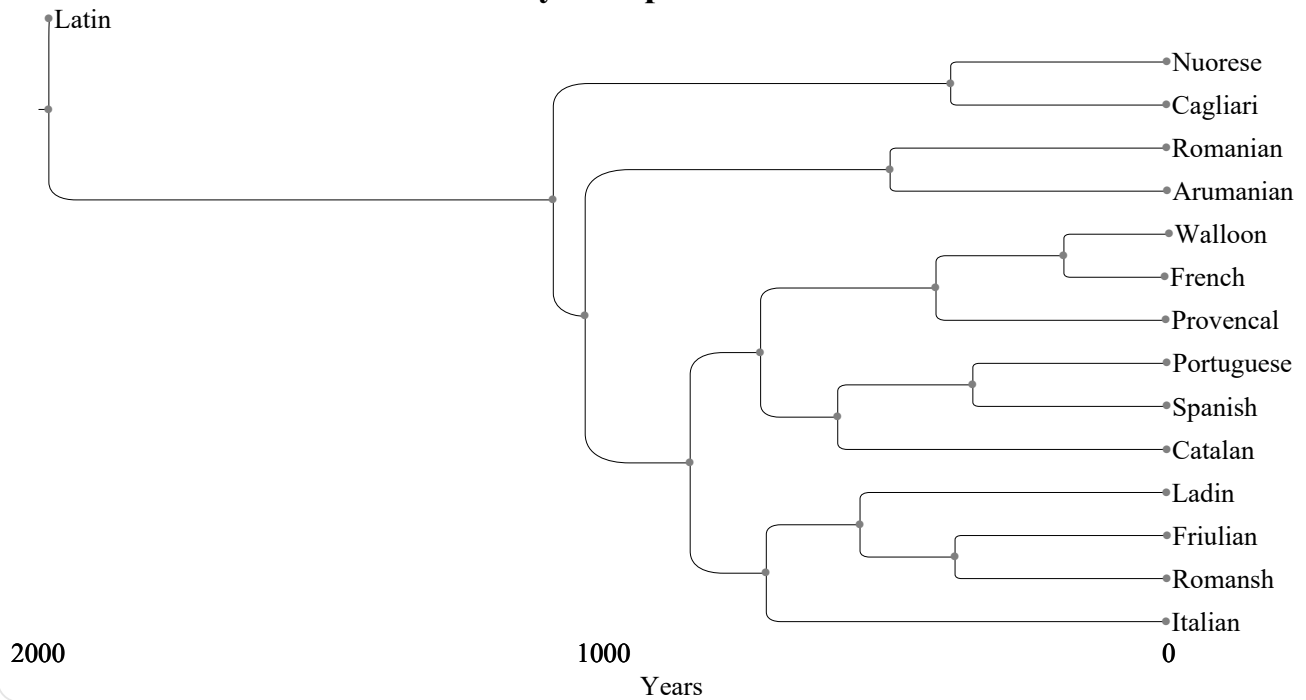
	Two-Duos	Two-Duae	Two-Duas	Three
Latin	d u o: s	d u - aj	d u a s	t r - e: s
French	d - ø -			t ʁ w a -
Spanish	d - o s			t r - e s
Italian		d u - e		t r - e -
PortugueseBrazi	d - oj s		d u e s	t r - e s
Portuguese	d - oj f		d u e f	t r - e f
Catalan	d - o s			t r - ε s
Walloon	d - ø: -			t r - ø: -
Friulian	d - oj -			t r - e: -
Romanian	d - oj -	d o w ə		t r - ej -
	Four	Five	Here	There
Latin	k <sup>w</sup> - a t t w o r -	k <sup>w</sup> i: n k <sup>w</sup> - e	- e k k u m h i: k	i l l a: k
French	k - a - t - - ʁ -	s ě - k - -	i - - s - - - i -	- - l a -
Spanish	k w a - t - - r o	θ i n k - o	- a - k - - - i -	a - j a -
Italian	k w a t t - - r o	ʃ i ŋ k w e	- - - k w - - i -	- - l a -
PortugueseBrazi	k w a - t - - r u	s ī - k - u	- a - k - - - i -	- - l a -
Portuguese	k w a - t - - r u	s ī - k - u	- e - k - - - i -	- - l a -
Catalan	k w a - t - - r ə	s i ŋ k - -	- a - k - - - i -	ə - ʎ a -
Walloon	k w a - t - - -	s ě - k - -		- - l a -
Friulian	k w a - t - - r i	ʃ i ŋ k - -	- a - k - - - i -	
Romanian	p - a - t - - r u	ʃ i n ʃ - -		- - l a -
	There-Ibi	There-Adlbi	Who-Qui	Who-Quem
Latin	i b i:		k <sup>w</sup> - i s	k <sup>w</sup> - e m -
French			k - i -	
Spanish		a i		k j e n -
Italian	- v i		k - i -	
PortugueseBrazi		a i		k - ěj - -
Portuguese		e i		k - ěj - -
Catalan			k - i -	
Walloon			k - i: -	
Friulian			k w i -	
Romanian				ʃ - i n e
	What	When-Quando	How-Quomodo	Not
Latin	k <sup>w</sup> - i d	k <sup>w</sup> - a n d o:	k <sup>w</sup> o: m o d o	n o: n
French	k w a -	k - ã - -	k ɔ m ã - -	n ɔ̃ -
Spanish	k - e -	k w a n d o	k o m o - -	n o -
Italian	k - e -	k w a n d o	k o m e - -	n o n
PortugueseBrazi	k - i -	k w ě - d u	k o m u - -	n ěw -
Portuguese	k - i -	k w ě - d u	k o m u - -	n ěw -
Catalan	k - ε -	k w a n - -	k ɔ m - - -	n o -
Walloon	k w ε: -	k w a n d -	k ɔ m ě - -	
Friulian	ʃ - e -	k w a n t -	ʃ e m u: t -	n o -
Romanian	ʃ - e -	k - i n d -	k u m - - -	n u -

# Appendix 3 - Concepts Used

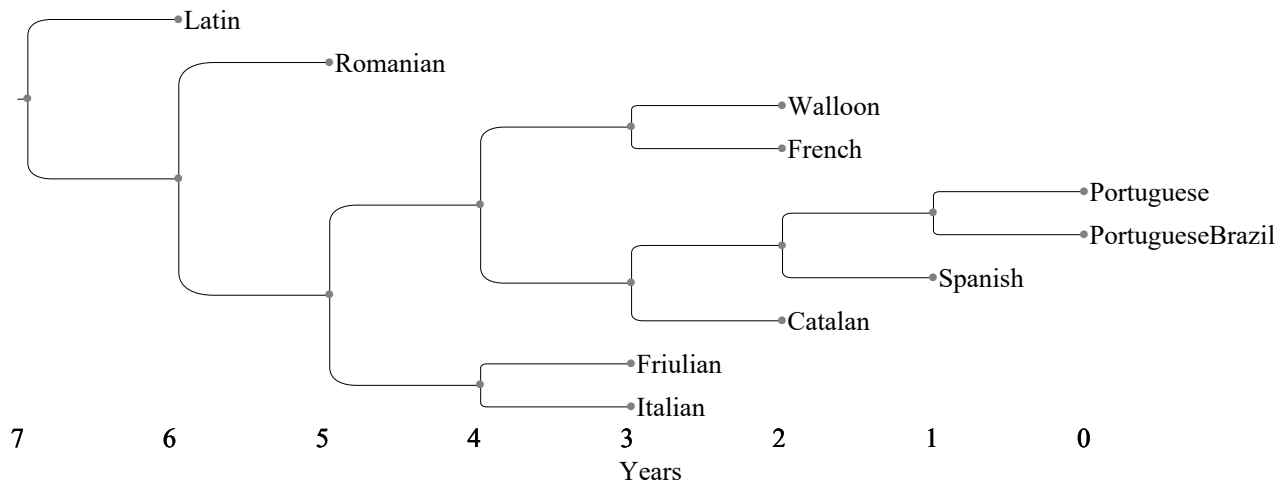
	Not-Nec	And-Et	And-Si
Latin	n e k	e t	s i: k
French	n i -	e -	
Spanish	n i -	i -	
Italian	n e -	e -	
PortugueseBrazi	n ěj -	i -	
Portuguese	n ẽj -	i -	
Catalan	n i -	i -	
Walloon	n ě -	ε -	
Friulian		e -	
Romanian		e -	ɨ i -

## Appendix 4 - Results

### Commonly Accepted Romance Tree

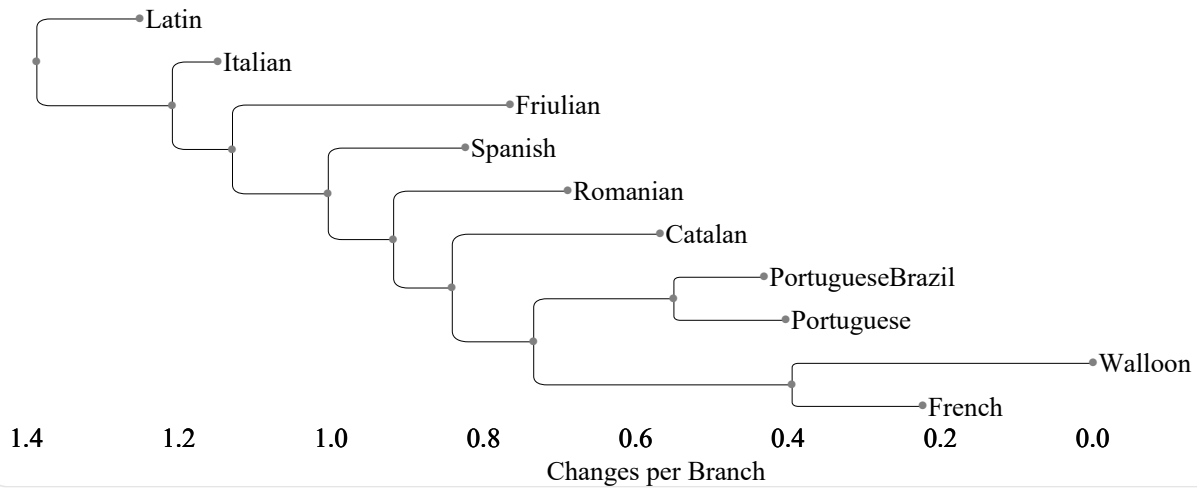


### Priors

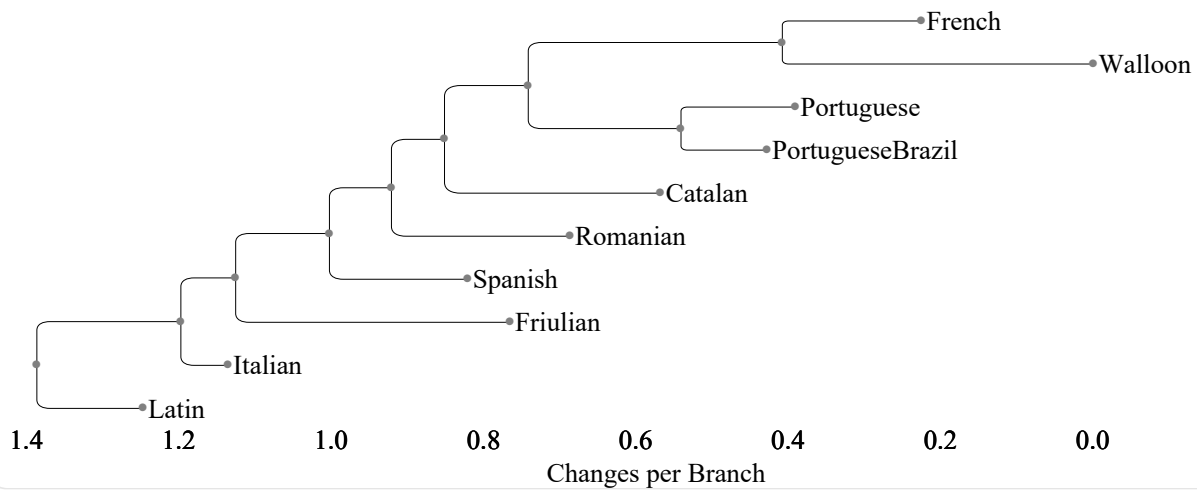


## Appendix 4 - Results

### Consensus



### MAP



## Appendix 4 - Results

