Simulated Segment Evolution using the TKF91 Model

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ABSTRACT

It all started in a little town called Madrid...

INTRODUCTION

In this paper, we attempt to do the impossible!

METHODS

We used any and all means necessary.

CONCLUSION

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APPENDICES

1) Concepts Used in the Experiment
2) Character file
3) Language Tree File
4) Segments used in the word list
5) Feature change in first segment

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	I	You	Water	Ear	New
Latin	egoː	tuː	akʷa	auris	nowus
Romanian	ew	tu	apɜ	ureke	now
Catalan	ʒo	tu	aixw̃ɜ	urɛʎɜ	nou
Portuguese	eu	tu	ɛgw̃a	oraʎa	novu
Spanish	yo	tu	agw̃a	oreha	nuevo
French	jɜ	ti	o	ore	nuvo
Walloon	çe	te	ɛwɜ	oreye	novɛl
Romansh	yaw	ti	awɜ	urɛʎɜ	nof
Friulian	yo	tu	agɛ	oreli	łuf
Italian	io	tu	akwa	orekkyo	nwovo

```
#NEXUS
begin DATA;
  dimensions ntax=10 nchar=32;
  format datatype=STANDARD gap=- missing=? symbols="ABCDEFGHIJKLMNOPQRSTUVWXYZabcd
";

  matrix
  Latin      (ABC)(DE)(FKF--)(FGHIJ--)(LMNGJ)
  Romanian   (AN-)(DG)(FPQ--)(GHAOA--)(LMN--)
  Catalan    (RM-)(DG)(FIUVQ)(GHSTQ--)(LMG--)
  Portuguese (AG-)(DG)(SBVF-)(MHFTF--)(LMWG-)
  Spanish    (XM-)(DG)(FBVF-)(MHAYF--)(LGAWM)
  French     (ZQ-)(DI)(M----)(MHA----)(LGWM-)
  Walloon    (aA-)(DA)(SNQ--)(MHAXA--)(LMWSb)
  Romansh    (XFN)(DI)(FNQ--)(GHATQ--)(LMc--)
  Friulian   (XM-)(DG)(FBS--)(MHAbI--)(dGc--)
  Italian    (IM-)(DG)(FONF-)(MHAOOXM)(LNMWM)


  ;
end;
```

```
#NEXUS
begin taxa;
  dimensions ntax=15;
  taxlabels Latin Nuorese Cagliari Romanian Arumanian Walloon French Provencal
Portuguese Spanish Catalan Ladin Friulian Romansh Italian;
end;
begin trees;
  tree LanguageTree = (Latin:0.81,((Nuorese:411.2,Cagliari:410.52):755.27,((
Romanian:526.1,Arumanian:526.97):579.53,((((Walloon:200.55,French:192.63):243.09,
Provencal:437.74):333.32,((Portuguese:369.61,Spanish:369.4):256.8,Catalan:626.07):
146.55):133.85,((Ladin:582.91,(Friulian:403.47,Romansh:403.37):180.58):178.13,
Italian:760.59):144.66):199.54):60.6):958.67):1324.32;
end;
```

Appendix 4 - Segments used in the word list

Char.	Segment	Words containing this segment
A	e	egoː, ew, ureke, eu, oreha, nuevo, ore, çe, te, oreye, ureʎɜ, oreli, orekkyo
B	g	egoː, ɛgw̃a, agw̃a, agɛ
C	oː	egoː
D	t	tuː, tu, ti, te
E	uː	tuː
F	a	auris, akʷa, apɜ, aixw̃ɜ, oraʎa, ɛgw̃a, oreha, agw̃a, yaw, awɜ, agɛ, akwa
G	u	auris, nowus, tu, ureke, ureʎɜ, nou, eu, novu, nuevo, nuvo, ureʎɜ, łuf
H	r	auris, ureke, ureʎɜ, oraʎa, oreha, ore, oreye, ureʎɜ, oreli, orekkyo
I	i	auris, aixw̃ɜ, ti, oreli, io
J	s	auris, nowus
K	kʷ	akʷa
L	n	nowus, now, nou, novu, nuevo, nuvo, novɛl, nof, nwovo
M	o	nowus, now, ʒo, nou, oraʎa, novu, yo, oreha, nuevo, ore, o, nuvo, oreye, novɛl, nof, oreli, io, orekkyo, nwovo
N	w	nowus, ew, now, ɛwɜ, yaw, awɜ, akwa, nwovo
O	k	ureke, orekkyo, akwa
P	p	apɜ
Q	ɜ	apɜ, ureʎɜ, aixw̃ɜ, jɜ, ɛwɜ, ureʎɜ, awɜ
R	ʒ	ʒo
S	ɛ	ureʎɜ, ɛgw̃a, ɛwɜ, novɛl, agɛ
T	ʎ	ureʎɜ, oraʎa, ureʎɜ
U	x	aixw̃ɜ
V	w̃	aixw̃ɜ, ɛgw̃a, agw̃a
W	v	novu, nuevo, nuvo, novɛl, nwovo
X	y	yo, oreye, yaw, orekkyo
Y	h	oreha
Z	j	jɜ
a	ç	çe
b	l	novɛl, oreli
c	f	nof, łuf
d	ł	łuf

Appendix 5 - Feature change in first segment

Concept: **I**

	e e ʒ e y j ç y y i
Rounded	
Vocoid	
Semivowel	
Long	
Voiced	
Velarized	
Ejective	
Pulmonic	
Nasal	
Tenuis	
Lateral	
Sibilant	
Fricative	
Approximant	
Implosive	
Central	
Tap/Flap	
Trill	
Stop	
Click	
Affricate	
Vowel	
Rhotic	
Occlusive	
Strident	
Obstruent	
Continuant	
Vibrant	
Liquid	

Concept: **You**

	t t t t t t t t t t
Rounded	
Vocoid	
Semivowel	
Long	
Voiced	
Velarized	
Ejective	
Pulmonic	
Nasal	
Tenuis	
Lateral	
Sibilant	
Fricative	
Approximant	
Implosive	
Central	
Tap/Flap	
Trill	
Stop	
Click	
Affricate	
Vowel	
Rhotic	
Occlusive	
Strident	
Obstruent	
Continuant	
Vibrant	
Liquid	

Concept: **Water**

	a a a ɛ a o ɛ a a a
Rounded	
Vocoid	
Semivowel	
Long	
Voiced	
Velarized	
Ejective	
Pulmonic	
Nasal	
Tenuis	
Lateral	
Sibilant	
Fricative	
Approximant	
Implosive	
Central	
Tap/Flap	
Trill	
Stop	
Click	
Affricate	
Vowel	
Rhotic	
Occlusive	
Strident	
Obstruent	
Continuant	
Vibrant	
Liquid	

Concept: **Ear**

	a u u o o o o u o o
Rounded	
Vocoid	
Semivowel	
Long	
Voiced	
Velarized	
Ejective	
Pulmonic	
Nasal	
Tenuis	
Lateral	
Sibilant	
Fricative	
Approximant	
Implosive	
Central	
Tap/Flap	
Trill	
Stop	
Click	
Affricate	
Vowel	
Rhotic	
Occlusive	
Strident	
Obstruent	
Continuant	
Vibrant	
Liquid	

Concept: **New**

	n n n n n n n n ɫ n
Rounded	
Vocoid	
Semivowel	
Long	
Voiced	
Velarized	
Ejective	
Pulmonic	
Nasal	
Tenuis	
Lateral	
Sibilant	
Fricative	
Approximant	
Implosive	
Central	
Tap/Flap	
Trill	
Stop	
Click	
Affricate	
Vowel	
Rhotic	
Occlusive	
Strident	
Obstruent	
Continuant	
Vibrant	
Liquid	