

Understanding Language Evolution Using an Event-Based Model

David M. Goldstein^{1,+}, Shawn H. McCreight^{2,+} and John P. Huelsenbeck^{3,+}

¹ Department of Linguistics

dgoldstein@humnet.ucla.edu

² Nytril LLC, 3060 San Pasqual St., Pasadena, CA 91107, USA

shawn.mccreight@gmail.com

³ Department of Integrative Biology

johnh@berkeley.edu

⁺ these authors contributed equally to this work

The diagram illustrates the five classes of speech sounds in English, represented by colored circles with numbers and labels:

- 1 Nasal Vowel** (Blue circle at the top)
- 2 Vowel** (Orange circle at the top right)
- 3 Nasal Consonant** (Grey circle at the bottom right)
- 4 Non Syllabic Sonorant** (Yellow circle at the bottom left)
- 5 Consonant** (Large blue circle on the left)

Arrows indicate the following relationships:

- Self-loops on 1, 2, 3, and 4.
- A double-headed arrow between 1 and 5.
- A double-headed arrow between 2 and 5.
- A double-headed arrow between 3 and 5.
- A double-headed arrow between 4 and 5.
- A double-headed arrow between 1 and 3.
- A double-headed arrow between 1 and 4.
- A double-headed arrow between 2 and 3.
- A double-headed arrow between 2 and 4.
- A large curved arrow on the left pointing from 5 back to 5.

Letter	Frequency %
m	4.3
n	4.1
o	4.0
p	3.9
q	3.8
r	3.7
s	3.6
t	3.1
u	3.0
v	2.9
w	2.8
x	2.7
y	2.6
z	2.5
a	2.1
b	2.0
c	1.9
d	1.8
e	1.7
f	1.6
g	1.5
h	1.4
i	1.3
j	1.2
k	1.1
l	1.0
...	...
y	0.4
z	0.05