



# Reliability of International Phonetic Alphabet (IPA) transcriptions generated by applications and websites

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## Abstract :

- Websites and applications were used to transcribe the same sample containing the sounds of the English language. Reliability assessment of IPA transcription generated by websites and applications was performed.
- Our study is based on the analysis of eight applications and four websites.
- A sample containing all the sounds of the English language was first created, then captured in each website/application to examine the reliability of these sites/tools with respect to IPA.

## INTRODUCTION

The International Phonetic Alphabet (IPA) consists of a series of symbols that are used to transcribe speech using a single graphic symbol corresponding to a sound (1:1 ratio).

It is used to provide a sufficient account to reconstruct the statement as reliably as possible.

Phonetic transcription is a clinical tool that speech-language pathologists (SLP) use when transcribing speech of individuals with phonetic or phonological difficulties. Through spontaneous language samples, SLPs must examine each statement by analyzing them into segmental units. The purpose of the IPA transcription is to ensure the reliable reproduction of oral statements.

Today, technological advances mean that there are several methods and forms of transcription. One can transform an oral discourse into a written one using a computerized vocal synthesis. In particular, operating systems found on devices such as Siri (Apple, 2017) and Cortana (Microsoft, 2017) can be used for these purposes. One can also transform a written discourse into an IPA transcription using software and applications. To this end, various websites and applications have been created to transcribe oral and written samples, using the IPA.

## OBJECTIVE

To establish the phonetic variations of English phonemes between applications or websites and to examine the differences in the phonetic transcription of phonemes of the same sample from these websites and applications.

## METHOD

### SAMPLE

« Please call Stella. Ask her to bring these things with her from the store: five green bags, fresh yellow cheese, a dozen eggs and a beige sponge. Also, bring a bowl of dessert for Bob. »

### STEP 1

- 1) Find **websites** and applications that allow for a phonetic transcription using IPA according to English samples.
- 2) Type sample into transcript box, respecting the language and dialect of the transcription site.

### STEP 2

- 1) Find **applications** that describe the sounds of the phonetic alphabet with examples of words in English.
- 2) Type all words given as examples by the applications in order to judge whether phonemes are transcribed accurately and with reliability from one application to another.

Applications	Websites
ToPhonetics English	<a href="http://lingorado.com/ipa/fr/">http://lingorado.com/ipa/fr/</a>
Phonetizer	<a href="http://upodn.com/">http://upodn.com/</a>
Phonetic symbol	<a href="https://easypronunciation.com/en/">https://easypronunciation.com/en/</a>
Phonetics	<a href="http://www.phonetizer.com/ui">http://www.phonetizer.com/ui</a>
IPAQR	
Phoneto	
Englics	
Phonetix	



## RESULTS

### VOWELS USED TO TRANSCRIBE WORDS FROM THE SAMPLE (WEBSITES)

Stella	3/6 -[ɛ]	2/6 -[e]	1/6 *
fresh	4/6 -[ɛ]	2/6 -[e]	
eggs	3/6 -[ɛ]	1/6 -[e]	
a_x3	5/6 -[ə]	1/6 -[e]	
for	4/6 -[ə]	2/6 -[ɔ]	
and	4/6 -[æ]	2/6 -[ə]	
her_x2	3/6 -[ɜ]	2/6 -[ə]	
dessert	5/6 -[ɜ]	1/6 -[ə]	
to	4/6 -[u]	2/6 -[ə]	
from	4/6 -[ʌ]	2/6 -[ə]	
sponge	5/6 -[ʌ]	1/6 -[ə]	
dozen	4/6 -[ʌ]	2/6 -[ə]	
of	5/6 -[ə]	1/6 -[ɑ]	
Bob	5/6 -[ɑ]	1/6 -[a]	
yellow	5/6 -[oʊ]	1/6 -[o]	
also	5/6 -[oʊ]	1/6 -[o]	
bowl	5/6 -[oʊ]	1/6 -[o]	
five	5/6 -[i]	1/6 -[j]	
beige	5/6 -[eɪ]	1/6 -[e]	

This table presents the different vowels used to transcribe the same word and the number of sites that used these different transcriptions among the words of the English sample. The ratio indicates that the **eɪ** in 'beige' was transcribed as [eɪ] by 5 out of 6 websites, and by [e] by one website.

\*Not transcribed due to being a proper name

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### VOWELS USED TO TRANSCRIBE WORDS FROM THE SAMPLE (APPLICATIONS)

Phonetic Symbol	Phonetics	Phonetix	IPAQR	Phoneto	Englics
[ɜ]			turn, learn		
[ɛ]	earth, bird, urban				herd, girl
[e]		herd, earth, fur	further, bird		
[ə]		farmer, waterfall			
[v]	very	voice, waiver,	voice, five	nephew	very
[p]	help	pot, happy, top	pet, map	passport	prize
[b]	better	ball, taboo, rub	bad, lab	beach	better
[t]	take	telephone, foot	tea, get	city	table

## CONCLUSION

All **consonants** but one (/v)\*\* were transcribed correctly. Several inconsistencies between websites and applications were observed, mostly on **vowel** transcription. However, the different vowels used to transcribe the same word are phonemes that share many distinctive traits and are very close to each other on the vocal trapezium. Since these sounds are part of the same variants, and do not cause a semantic difference when used interchangeably, it does not generate problems and difficulties in the understanding of speech.

Applications and websites can be very useful and a great timesaver for Speech-Language Pathologists when evaluating speech samples.

However, SLPs should still take precautions while using these tools and remain aware of the different dialects.

\*\*/v/ was transcribed as /f/