*(Main steps are presented in the main body in regular font style with additional information in italics and text with hyperlinks in blue. The same convention is adopted for the Appendix, in which more steps are provided. Use also the help of the relevant software.)*

Software Required

Apart from Word, the following need to be installed -

1. [WavePad Free Audio Editor](https://www.nch.com.au/wavepad/index.html)

*The freeware is powerful, easy-to-use and efficient, and occupies little disc space.*

1. [Balabolka](http://balabolka.site/balabolka.htm)

*The Text-to-Speech programme is free, powerful, easy-to-use and efficient, and takes up little disc space. The basics of Microsoft speech programming are clearly presented in its help.*

1. [Microsoft Text-to-Speech Languages for Windows 10](https://support.office.com/en-us/article/how-to-download-text-to-speech-languages-for-windows-10-d5a6b612-b3ae-423f-afa5-4f6caf1ec5d3) (Hong Kong for classical pronunciation; Italian for Italianate pronunciation; follow the answer to the second question under Speech Engines in the [Balabolka FAQ](http://balabolka.site/bfaq.htm) to unlock the engines)

*The engines are free. Among all Microsoft and compatible engines, eSpeak Latin (requiring no text conversion but too robotic) and Microsoft Cantonese voices are the only ones having the required sounds for classical pronunciation while most Italian voices can be used for Italianate pronunciation.*

Basic Steps

1. Input text, macronised and with the semivowel i converted to j, in Conversion (Latin).docm (enable the macros when opening the file for the first time).
   * 1. [*Winge’s A Latin Macronizer*](http://alatius.com/macronizer/) *can convert the semivowel i to j when macronising text.*
     2. *To cope with loss of manual line breaks and paragraph marks for text copied from the macroniser to Word, one can add characters (e.g. @ and $) before them with Replace All of Word [type ^l and ^p (special characters for them) in Find What, and @^l and $^p in Replace With respectively] before copying the text to the macroniser, and replace the characters with them after macronising the text and copying it back to Word.*
2. Convert the text by running macros -
   1. Classical pronunciation

ClassicalOneStep (or ClassicalStep1 and, after editing, ClassicalStep2)

* 1. Italianate pronunciation

ItalianateOneStep (or ItalianateStep1 and, after editing, ItalianateStep2)

* + 1. *Running the macros takes time. If the Not Responding message appears, just wait. If it takes too long (say more than ten minutes), force-close Word and try inputting shorter text at a time.*
    2. *See the Appendix for editing after running ClassicalStep1 or ItalianateStep1.*

1. Create the audio with the following steps -
   1. Classical pronunciation
      * 1. Copy the text to the Text-to-Speech window of WavePad direct or after further editing with Balabolka [use SAPI 5 (not SAPI 4 or Microsoft Speech Platform) and select a Microsoft Hong Kong voice].
        2. Select a Microsoft Hong Kong voice and synthesise the speech.
        3. Normalise the audio with the average loudness and then the peak.
        4. Select the audio but leave a little silence at the start and end.
        5. Trim all silences with a minimum length of 2000 milliseconds to 0 millisecond.
2. *Microsoft Hong Kong voices are designed to read Cantonese and English. They have the y sound of classical pronunciation and produce it in Cantonese (any Chinese character in the text will not be converted and will be read in Cantonese) or with the symbol (accented or not) standing alone. However, when the symbol is combined with other symbols like symbols for English, they change it to u.*
3. *To circumvent the technical constraint, silences are temporarily added before and after the symbol. WavePad allows only the minimum length to be set for silences to be trimmed and trims silences at the start and end of the selection irrespective of the minimum length. As such, silences added before and after the symbol are set at 2100 milliseconds (including buffer for deviations) to provide a longer possible length for pauses in the reading while step 4' is required to avoid loss of sounds during playback. With step 3', trimming of small sounds (e.g. part of a consonant) can be avoided.*
   * + 1. For poetry, trim all silences with a minimum length of 600 milliseconds to 300 milliseconds.
       2. Edit the audio further as needed.

*Unwanted silences longer than the longest silence required (for poetry, 450 milliseconds with end-of-paragraph pauses and 300 milliseconds without) can be trimmed in one go while the shorter ones need to be trimmed individually. Speech synthesis problems such as unwanted silences can often be solved by adding paragraph marks (at points where breathing would be natural) when inputting or editing the text.*

* + - 1. Save the audio.
  1. Italianate pronunciation
     + 1. Using WavePad

1. Copy the text to the Text-to-Speech window of WavePad.
2. Select an Italian voice and synthesise the speech.
3. Do steps a 3', 4', 6' and 7' as needed, and save the audio.
   * + 1. Using Balabolka
4. Copy the text to Balabolka.
5. Select an Italian voice and edit.
6. Save the audio (and, if needed, do steps a 3', 4' and 6' to 8' after opening the audio with WavePad), or do step b 1'.

Additional Macros

1. The following are similar to ClassicalOneStep, etc but the text can include English or Italian to be read in two voices -
2. ClassicalEnglishOneStep
3. ClassicalEnglishStep1 and ClassicalEnglishStep2
4. ClassicalItalianOneStep
5. ClassicalItalianStep1 and ClassicalItalianStep2
6. ItalianateEnglishOneStep
7. ItalianateEnglishStep1 and ItalianateEnglishStep2
8. ItalianateItalianOneStep
9. ItalianateItalianStep1 and ItalianateItalianStep2
10. *They can be adapted to convert text with notes, from a dictionary or textbook, etc.*
11. *To read abbreviations in words or change pronunciation, add replacement commands in the S03hEnglishAbbreviation, S03hItalianAbbreviation, S03jEnglishCorrection or S03jItalianCorrection macro (see such commands in S03jEnglishCorrection or S03jItalianCorrection; do not rely on speech engines or websites using them for pronunciation of proper names but check the pronunciation with an authoritative dictionary or other trustworthy references).*
12. *For use of Microsoft English or other voices installed instead of those set, change the voice names in ClassicalEnglishStep2, ClassicalItalianStep2, ItalianateEnglishStep2 or ItalianateItalianStep2.*
13. The following are also similar but the text can include Latin to be read with classical and Italianate pronunciation each in two voices as well as English and Italian each to be read in two voices -
    1. MultilingualOneStep
    2. MultilingualStep1 and MultilingualStep2
14. *They can be adapted to convert text requiring different voices (e.g. dialogues), from multilingual materials, etc.*
15. *For use of other voices installed instead of those set, change the voice names in MultilingualStep2.*
16. *The remaining macros in the file are submacros.*
17. For the text, Latin should be in bold, and English and/or Italian in regular font style and/or italics.
18. For MultilingualOneStep (or MultilingualStep1 and MultilingualStep2), note the following -
    1. The text should also be coloured -

Classical pronunciation in dark blue and dark red

Italianate pronunciation in blue and red

English in dark blue

Italian in dark red

*The colours are those named in Standard Colors of Font Color of Word. The use of colours allows enormous flexibility for adaptation. Only black and white, which are used for processing text, cannot be used.*

* 1. After copying the text to Balabolka or the Text-to-Speech window of WavePad, Microsoft Danny Mobile should be selected.

*Try the text below [copy it to Conversion (Latin).docm, run MultilingualOneStep (or MultilingualStep1 and MultilingualStep2) and create the audio with the relevant steps] -*

**Avē, Marīa, grātiā plēna.**

**萬福瑪利亞，妳充滿聖寵。**

**Avē, Marīa, grātiā plēna.**

**Avē, Marīa, grātiā plēna.**

**Avē, Marīa, grātiā plēna.**

*Hail, Mary, full of grace.*

Hail, Mary, full of grace.

*Ave, o Maria, piena di grazia.*

Ave, o Maria, piena di grazia.

**Editing after Running ClassicalStep1 or ItalianateStep1**

1. ClassicalStep1 and ItalianateStep1 mark accents and replace letters in some combinations so that the text can be converted to required symbols. They also change -

[, ( and / to , plus a space

] and ) to ,

1. They initially turn the text in lower case as subsequent processing are **case-sensitive**.
2. They then apply the following, which should also be used in editing before running ClassicalStep2 or ItalianateStep2 -
3. Both

æ, A, I, U, œ and Y for ae, au, ei, eu, oe and ui as diphthongs

jj for j between vowels

N for n as in fingo (hence g as in magnus for classical pronunciation)

Q for qu

1. ClassicalStep1

p for b before s or t

zz for z between vowels

1. ItalianateStep1

æ, E, W and O for open ē, e, ō and o

C, tC, G, dG and S for c, cc, g, gg and sc before ae, e, etc

dz for z between vowels

f and ff for ph and pph

Ñ for gn

T for t as in gratia

w for u as a semivowel (not applied but to be used)

Z for s before d, g, etc

1. The output of ClassicalStep1 or ItalianateStep1 for a whole word or part pattern can be changed by adding a replacement command in the S03bClassicalCorrection or S03bItalianateCorrection macro (see such commands in S03bItalianateCorrection).
2. For poetry, do the following -
3. To cut off final vowels and m, just delete them. To merge final vowels and m with initial h and vowels instead, do the following -
   * + 1. Change m to N.
       2. Add X1 before the group of diphthongs, short vowels, N and h, and X2 after the group.
       3. Change long vowels to short ones.
4. Add B2, B3 and B4 at the end of each line and paragraph and for additional in-line pauses respectively.
5. Use Replace All to remove all spaces (type a space in Find What and leave Replace With blank).
6. *Example*
7. *Text input*

*Ītaliam fātō profugus Lāvīnaque vēnit*

*lītora multum ille et terrīs jactātus et altō*

1. *After running ClassicalStep1*

*īt'aliam f'ātō pr'ofugus lāv'īnaQe v'ēnit*

*l'ītora m'ultum 'ille 'et t'errīs jact'ātus 'et 'altō*

1. *After editing*
   1. *Cutting-off*

*īt'aliamf'ātōB4pr'ofugusB4lāv'īnaQev'ēnitB2*

*l'ītoraB4m'ult'ill'ett'errīsB4jact'ātus'et'altō*

* 1. *Merging*

*īt'aliamf'ātōB4pr'ofugusB4lāv'īnaQev'ēnitB2*

*l'ītoraB4m'ultX1uN'iX2llX1e'eX2tt'errīsB4jact'ātus'et'altō*