How to use Chinese, Japanese and Korean Input Method Editors (IMEs)

Martin Heijdra, August 2005

I Some general issues

• Assumed is that the keyboards and IME’s are already installed; this includes the CJK input method editors for the PRC, Taiwan, Japan and Korean from the Microsoft Office Proofing Tools 2003 disk on Windows XP with Office 2003 available. The specific versions of the IMEs may differ with other versions of Office and/or Windows, and depend on the order in which they are installed.

• Also installed: the LATr21 keyboard, associated with a language of choice; here at Princeton with AF (Afrikaans)

• Note that many key combinations on the LATr21 keyboard, e.g. many Control-Alt combinations, are pre-empted by Word and therefore do not function. Use Wordpad instead, make sure you have Arial Unicode MS as your font, and then copy-and-paste.

• Shown here are the IMEs as behaving with Word; other programs, including Voyager and RLIN21 may slightly differ in advanced features, and use Standard instead of Natural modes

• Not specifically treated here are issues such as the change in RLIN21 to combining characters following base character (different from library standards hitherto)

• There are many other special CJK settings in Word worth trying out: text direction, Asian Layout etc. (for some of which you need Proofing tool, or set default language behavior in Office Language settings). E.g. Japanese grids (in page set-up), special Japanese seasonal greetings, Chinese translations from Simplified to traditional, Hanja to hangul, applying automatic furigana to Japanese or pinyin reading to Chinese etc.

• An easy way in Word to get at Chinese or Japanese readings from a particular character already in a document, first make sure the language attribute of the character is correctly set to Chinese (PRC), Chinese (Taiwan), or Japanese (if necessary, reset it using the Language box or the Language setting available from the Word Tools menu) and then select “Phonetic Guide…” from the Asian Layout menu under Format. Chinese (PRC) will show up in pinyin above the characters, Chinese (Taiwan) in zhuyin fuhao next to the character, and Japanese in hiragana above the character. For Korean, use Alt+Ctrl+F7 to add the hangul.

II Language Bar

• For best predictable results on Windows 2000: choose “Show the language Bar” to have it floating

• You can choose to select to show texts belonging to icons in the general Language Bar settings (click on the right triangle and choose “settings”). The bar may then become very long however depending on icons chosen for the language bar.

• In the same settings sheet you can click on “Key Settings” to set keyboard shortcuts to change easily between different keyboard layouts, e.g. between LATr21 and your usual IME

• In most IMEs it is useful to select more icons on the Language Bar than the default: click on the right triangle to toggle display of these icons on and off

• For all IMEs the general procedure is as follows:
  o type the pronunciation;
  o one candidate is given; while that is still underlined by a dotted line, you still can change the characters chosen by opening the candidate window, if it is not already open
  o you select your desired candidate, and then confirm the selection of your chosen characters: the underline will disappear
- In advanced IMEs and programs, you still may be able to change confirmed characters by choosing Reconvert or right-clicking the character; in other programs the only way is to delete the wrong characters and start anew.
III IME Pad Applets

- The new 2003 IME versions all have access to the IME Pad;
- Using the IME Pad you have access to many applets at the same time; there is access to Chinese or Korean applets when using the Japanese IME, etc. By default, you have only access to the last installed five applets, but you can easily install all 14: open any applet in the IME Pad from within any IME by clicking on its icon in the Language Bar, then click on the IME Pad icon in its menu bar, and choose “Applet menu”, “User settings” and then add and order all applets you want in your preferred order.
- Available are: Handwriting (ZH-CN for PRC, CH, JA, KO), Radical input (CH, KO, JA), Strokes (CH, JA, KO), Character lists (CH, JA), Dictionary (Combined Radical and Strokes for PRC CH), and Soft Keyboard (JA—Chinese and Korean equivalents are on the language bar by themselves.)
- You can select characters by radical, total stroke count, or some more specialized character lists in the different language applets.
- The various dictionary lists may have advanced views in which more information on readings etc. is available. Moving the cursor on top of a character often gives readings, encoding values etc.; and/or choose the “Advanced view” if that button is present.
- For Japanese, you can enter a variant of a character by right-clicking on it.
- For handwriting, you can move your mouse to write a character, which displays in a second window candidates from which you can choose the final choice by clicking (which transfers it to the application). You can delete your entered strokes one by one.
- In Korean, Chinese a continuous handwriting input mode is available (more boxes) versus handwriting search (one box). You probably would only want to choose the latter if occasionally entering one character using the mouse.
IV PRC Chinese Input Method Editor (Simplified and Traditional)

- **General issues**
  - Use the Microsoft Pinyin IME 2003 Chinese (PRC) from the IME icon chooser (other options may be available).
  - You can keep the current “Natural” input mode or switch to the more familiar Classic mode (natural, classic, traditional are the three options). The two methods differ in when conversion into characters take place; they differ more if “prompt candidate” is selected on the properties sheet, which you may not wish to do since it disables selection by tone.
  - You may see the Chinese (PRC) language bar in two parts when going from EN to CH; to make sure you get all icons in one language bar, choose first EN, then JA, then CH.
  - Select extra icons by checking the relevant icons in options available when clicking on the right triangle: add character set, IME Pad and if necessary, Soft keyboard (may be useful for certain Chinese punctuation).
  - The Simplified IME can also be used for Traditional Chinese in Office; select 繁, 简 or 大 (both at the same time, with preference to simplified) from the language bar.
  - Other choices available using icons on the language bar: full-width versus half-width input (for Western letters, numbers, punctuation including space; the keyboard shortcut is Shift-Space), style of punctuation (Chinese or Western), and a tools menu (from where you can choose the phrase tool, or input by Unicode encoding).

- **Settings**
  - Settings for the IME as a whole are set by changing the settings on the “property sheet,” which is available from the Tools icon, first choice (“Options”).
  - If you want to limit results by tone marks 1-5 you should turn “prompt candidate” and/or “word forecast” off (if you have the candidate window always open, numbers refer to the candidate number, not the tone).
  - Other default choices are probably all OK: self-learning and user-defined phrase should remain enabled, as is the choice “full pinyin (support simplified pinyin)”.
  - You may want to open other dictionaries from the “Language” tab on this sheet.

- **Input**
  - Type *pinyin* in a sentence (e.g., *jiji*); let the system select characters automatically; underlined means choices are available; press Enter to confirm choice.
  - Move (e.g., by arrows) cursor in front of the character or character phrase you want to change to select correct characters.
  - You can use Page Up and Page Down to move between candidate window lines; use Up and Down arrows or numbers to move between candidates on a line.
  - The Shift key toggles between Chinese and English input while using this Chinese IME.
  - Press Enter or Space to confirm your selection (in natural input mode, Space converts last *pinyin* input, while Enter does not.)
  - In applicable programs, right-click before the character to reconvert a phrase to another choice even after confirmed.
  - With “support simplified *pinyin*” selected, you can abbreviate inputting words to only their starting consonant clusters (with some decrease of accuracy): *zhgjlsb* for *zhongguo fujiao lishi* e.g.
• Adding words to the system dictionary
  - You can either edit the “User-defined phrase tool” separately, or you can enter a phrase by selecting it **while still underlined**, and press Enter. Subsequently it will be available as a word choice, and you can enter it using simplified *pinyin* input. This works only for words, not individual characters; you cannot enter a one-character Japanese character this way
  - For such user-phrases, and other phrases longer than 9 characters, you can also add *shortcuts*; to invoke them, use the leading key ‘ before typing the shortcut (e.g., when you assign the shortcut `gj for 中国国际图书贸易总公司, you can enter the complete Chinese phrase simply by typing `gj.)

• Often asked questions
  - Use the punctuation soft keyboard (available by clicking on the Tools icon, and choosing the “Soft keyboard” pop-up menu) for rare punctuation; to input radicals separately, click on the Help icon, choose “Microsoft Pinyin IME Help”, and select “Radical Input” under “Advanced Topics”
  - Use the ‘ key to separate syllables starting with vowel (xi’an)
  - The ü is inputted as v in lü, nü (i.e., lüe, nüe, nüe or lüe, nüe). For other strange *pinyin* (e.g. ê for 見), click on the Help icon, choose “Microsoft Pinyin IME Help”, and select “Pinyin Standard” under “Relevant Notes and Topics”.

• RLIN21/Voyager with Unicode issues
  - Not all characters you can input using the IME are valid MARC21 characters, the standard used for RLIN and Voyager Records. If a character was not in RLIN before, it will be rejected by Voyager and RLIN21 upon validation
  - Therefore, you may have to be careful when inputting certain characters, since the IME may by default give you a non-MARC21 character
    - E.g., when typing *xulun* the default choice, using the Traditional character set in the PRC IME is 緒論 without a dot in xu. This is not a valid MARC21 character, which should be xu with a dot 緒. To get at this character, either enter xu as an individual phrase and choose the correct dotted character from the candidate windows; or correct 緒論 while it is still underlined by moving the cursor before 緒 and then replace the character with the dotted 緒.
    - For future use, you should register such a corrected word into your user dictionary. You do this by selecting e.g. the correct dotted 緒論 *xulun* while it is still underlined and press Enter. See above under “Adding words to the system dictionary.” Next time you enter *xulun* in *pinyin* both options, with or without dot will be available. Unfortunately, you cannot add new readings to a single character.
  - Problems (some problems are linked, and may benefit from a variety of the solutions offered here)
    1. you cannot find the character you want by pronunciation
      - Try entering the IME Pad to enter the character using handwriting
      - Use the IME Pad to enter the character using the Stroke, Radical or other dictionaries
    2. the character you think is correct is rejected through the validation process and you cannot find the you knew character RLIN used as replacement, or (3) you do not know what the right character should be now that your character has been rejected
      - Use the Unicode value to enter the character. You may want to look at [http://www.unicode.org/charts/unihansearch.html](http://www.unicode.org/charts/unihansearch.html) and search for the character using the pronunciation you do know. Click on the possible
variants. A valid MARC21 character has a value in the EACC box on the
page; a non-valid character has not. Write down the UTF-16 encoding of
four numbers (0-9, A-F are the valid “numbers”)

- In the MSPY 3.0 IME, you can input the character by encoding using
  Unicode Input: click on the Tools icon on the Language Bar, select
  “Unicode Input” from the “Internal Code Input” choice, and type the
  encoding. Return to usual pinyin input by clicking on the Unicode icon and
  select “Back to PinYin Input”.

- You can also locate the character in the Character map applet (in System
  Tools under Accessories), or type the encoding in Wordpad, and then type
  Alt-x; once available you can use copy-and-paste to transfer the character
to your application

- (4) you need access to a rare Japanese character in the Chinese IME or vice versa
  - At http://www.unicode.org/charts/unihansearch.html you can search for
    a character using the pronunciation of one language and find the
    pronunciation in another language, or the Unicode encoding: you can then
    proceed as under (2).

- Of course, since RLIN21 or Voyager do not mind which IME you use to
  input the character, you can also simply switch IMEs if you do know how
  to input the character using another language IME
V Traditional Chinese Taiwan Input Method Editor

- **General issues**
  - Use the Chinese (Taiwan), New Phonetic IME (this is not the default; choose manually).
    Do NOT choose US keyboard. You may also want to add the Chinese (Taiwan) Unicode IME (單碼輸入法) as an additional Chinese (Traditional) keyboard.
  - The PRC IME can also be used for Traditional Chinese in some programs such as Office, but not in some other programs, such as Netscape Composer.

- **Settings**
  - Settings for the IME as a whole are set by changing the settings on the “Properties” sheet, available by clicking on the Tools icon on the Language Bar.
    - Suggestions are as follow:
      - On the “General” tab: Use intelligent mode; you may want to choose large font as the domain of candidates.
      - On the “Keyboard mapping” tab: most users would like to use the Hanyu Pinyin keyboard layout.
      - On the “Dictionary tab”: “Enable user phrase” should be selected, and the “Setting” for learning should have “Personal regulating” and “New phrase learning” enabled (the first choice adds a word to the dictionary immediately after having corrected a phrase, the second choice after five times having input a particular new phrase).

- **Input**
  - Enter a phrase using pinyin; if choices made automatically are not correct, move the cursor to in front of the character you need to change, and press the Spacebar or Down arrow to show the Candidate window.
  - Within the candidate window use Up and Down arrow keys, the mouse, or type a number to select candidate.
  - Use Page Up and Down to show easily other pages in the Candidate window; pressing the Right arrow expends the window to show a 5-column page if applicable.
  - Press Enter to confirm selection.
  - The Shift key toggles between Chinese and English input while using the Chinese (Taiwan) IME, Control-Space toggles between the Chinese (Taiwan) IME and English keyboard.
  - In applicable programs, right-click before the character to reconvert a phrase to another choice even after confirmed.

- **Adding words to the system dictionary**
  - This happens automatically.
  - Only when using the Standard Bopomofo keyboard (which does not use pinyin) you may edit the “User-phrase” dictionary tool, so in practice this is not very useful. In that case there are provisions for bulk editing, import, and analysis of existing documents. This User phrase dictionary tool is grayed-out when using the Hanyu Pinyin keyboard to input phrases.
  - Add new phrases by selecting a phrase while it is still underlined, and then press Enter. Also, this works only when using the Standard Bopomofo keyboard, although when learning is checked, your choices should generally become more easily available.

- **Often asked questions**
  - Punctuation: if rare punctuation symbols are needed, use the ` key plus a similar common punctuation symbol (e.g. ` for ． for ︰).
    You can then call up the Candidate window to see more choices.
  - Ctrl-Alt-, opens up a punctuation Soft keyboard; or, choose it from the Tools icon.
You may or may not use tone marks 1-5
The ü is inputted as v in liü, nü (i.e., li, nu), but as u in liue, nüe (i.e. lie, nue)

**RLIN21/Voyager with Unicode issues**
- Not all characters you can input using the IME are valid MARC21 characters, the standard used for RLIN and Voyager Records. If a character was not in RLIN before, it will be rejected by Voyager and RLIN21 upon validation.
- Therefore, you may have to be careful when inputting certain characters, since the IME may by default give you a non-MARC21 character.
  - E.g., when typing xulun the default choice, using the Traditional character set in the PRC IME is 緒論 without a dot in xu. This is not a valid MARC21 character, which should be xu with a dot 緒. To get at this character, either enter xu as an individual phrase and choose the correct dotted character from the candidate windows; or correct 緒論 while it is still underlined by moving the cursor before 緒 and then replace the character with the dotted 緒.
- Problems (some problems are linked, and may benefit from a variety of the solutions offered here)
  1. You cannot find the character you want by pronunciation
     - Try entering the IME Pad to enter the character using handwriting
     - Use the IME Pad to enter the character using the Stroke, Radical or other dictionaries
  2. The character you think is correct is rejected through the validation process and you cannot find the you knew character RLIN used as replacement, or (3) you do not know what the right character should be now that your character has been rejected
     - Use the Unicode value to enter the character. You may want to look at [http://www.unicode.org/charts/unihansearch.html](http://www.unicode.org/charts/unihansearch.html) and search for the character using the pronunciation you do know. Click on the possible variants. A valid MARC21 character has a value in the EACC box on the page; a non-valid character has not. Write down the UTF-16 encoding of four numbers (0-9, A-F are the valid “numbers”)
     - In the New Phonetic input method, you can either input the character by typing ‘u plus your encoding value; or type the encoding string using the Unicode Input mode (單碼輸入法) from the Language Bar.
     - You can also locate the character in the Character map applet (in System Tools under Accessories), or type the encoding in Wordpad, and then type Alt-x; once available you can use copy-and-paste to transfer the character to your application
  3. You need access to a rare Japanese character in the Chinese IME or vice versa
     - At [http://www.unicode.org/charts/unihansearch.html](http://www.unicode.org/charts/unihansearch.html) you can search for a character using the pronunciation of one language and find the pronunciation in another language, or the Unicode encoding; you can then proceed as under (2).
     - Of course, since RLIN21 or Voyager do not mind which IME you use to input the character, you can also simply switch IMEs if you do know how to input the character using another language IME.
VI Japanese Input Method Editor

- **General Issues**
  - Use the Japanese IME 2003 Natural Input mode for Office programs; other programs may only be able to use Standard Input.
  - Click on the right triangle on the language bar to get to more icons on the Language Bar: add e.g. the IME Pad, and “Add Word or Entry” icons.

- **Settings**
  - Select the “Properties” sheet from the Tools icon on the Language Bar; on the “Mixed Japanese/English” tab check the “Use the shift key for switching…” box to change easily from Japanese to English within the Japanese IME for short phrases [do not start by a space; that refers back to hiragana]; suggestions are not to change anything else.
  - You should ascertain that on the “Keyboard” tab the function keys are checked, and that the “Also use Space key for conversion” is checked.
  - There are very many other settings, including e.g. choice for okurigana; whether kana is always displayed in the Candidate window; Autocorrect settings etc. See the help files: click on the Help icon on the Language Bar, and choose “Contents and keywords” from the “Microsoft Natural Input 2003” pop-up menu.
  - The settings here refer to the Natural Input mode; most settings for the Standard Input mode are similar but may look different.

- **Input**
  - For conversion to characters you have to be in hiragana input mode.
  - Type your entry; press Space to convert; press the Spacebar a second time to get at the Candidate window; use arrows or numbers to select and/or navigate in the Candidate window; use Enter to confirm choices.
  - To lengthen or shorten the phrase boundaries used for conversion move your cursor to the first hiragana syllable, and press Shift-Right or Shift-Left arrow.
  - You can use the ESC key to revert to full hiragana input when still in conversion mode (dotted underline).
  - When you are in composition mode (your input is still underlined): change a selected phrase into hiragana by pressing F6; katakana by pressing F7; for half-width katakana use F8, for full-width alphanumeric F9, for half-width alphanumeric F10.
  - Repeat F9 and F10 repeatedly to cycle through lower case, upper case, and initial upper case; repeat F6, F7, F8 repeatedly to change from one kind of kana to the other one syllable at a time.
  - Characters in the Japanese candidate window may have comments to help you distinguish between homonyms.
  - Rāmaji choices are not available in candidate window unless you checked that option in “conversion” preference.
  - Expand the Candidate window by clicking >>; change its sorting by clicking <->, and then selecting “Sort” (options are system dictionary versus by kanji).
  - After conversion is confirmed, you can still correct your entry in some programs by: (1) right-clicking on the phrase to get alternative phrases; (2) with cursor on phrase clicking on the “Correction” icon on the Language Bar (which gives also character by character choices); (3) or selecting the phrase and pressing the Spacebar if in hiragana mode; if candidate windows appears you can use Esc to convert to original hiragana reading.
  - There are several dictionaries you can choose from in the language bar: General, Bias for Names and Bias for Speech. You may want to choose Bias for Names when inputting names to increase choices.
  - If set thus on the “Properties” sheet, Shift toggles between Japanese and English input; note that typing a capital brings you automatically to the English mode, but that after entering such a phrase the input mode is set back to hiragana.
  - You could set the Spacebar to always have Western (half-width) space on the “Keyboard” tab on the “Properties” sheet; otherwise, Shift-space enters a space different from the mode you are working in (full-width versus half-width).
Adding words to the system dictionary

- Registration of words is available from Tools menu ("Add word or entry"); only put in the non-inflected stem, and register the phrase according to the correct part of speech; (noun, different types of verb etc.) one can add user comments.
- Use the Dictionary tool icon to enter more words at the same time, e.g. importing from a text file (it may be hidden on the pop-up menu under the right triangle). New system dictionaries can be created (up to 15 can be used at once): e.g., one could make an exchangeable dictionary for Classical Chinese as used in Japanese.
- There is a Conversion Training wizard icon to extract all non-registered words from an Office document, which then can be edited.
- Copying a phrase (select and press Control-C) or in Office simply selecting a phrase automatically adds it to the display box in the "Add word or entry" window when opening the latter.
- For further manipulation of the dictionaries, refer to the help screens (choose “Contents and keywords" under “Microsoft Natural Input 2003” from the pop-up menu under the Help icon on the Language Bar).
- On the “Properties” sheet from the Tools icon pop-up menu, on the “Dictionaries/Auto-tuning” Tab, you can choose to open extra dictionaries; this includes the Character code dictionary, which can be set to include Unicode via its own properties (select the dictionary, and select the Properties... button).

Often asked questions

- By default, the size of space depends on whether you are using a half- or full-width setting; use Shift to change the other width. These default settings can be changed on the “Keyboard” tab on the “Properties” sheet.
- To get at small kana syllables use “x” in front of your input: xtu for っ. For other uncommon kana sequences, click on the “Keyboard” tab of the “Properties” sheet on the “Replace…” button (you don’t actually have to change the Romaji settings, but could); or you can click on the “Romaji-kana correspondence chart” on the help screens (choose “Contents and keywords” under “Microsoft Natural Input 2003” from the pop-up menu under the Help icon on the Language Bar).

RLIN21/Voyager with Unicode issues

- Not all characters you can input using the IME are valid MARC21 characters, the standard used for RLIN and Voyager Records. If a character was not in RLIN before, it will be rejected by Voyager and RLIN21 upon validation.
- Therefore, you may have to be careful when inputting certain characters, since the IME may by default give you a non-MARC21 character.
  - E.g., when typing サ冷 for 冷, 冷 is not a valid MARC21 character, which should be 冷. To get at this character, you have to find that character in another way (using Chinese, using Unicode, using copy-and-paste, using IME handwriting, or using the IME dictionaries: see suggestions below). Note that with handwriting, you may have to choose Handwriting (CH) to get at the Chinese versions of characters, but that handwriting applet will be available to you from the Japanese IME pad. Also note that you still may have to make sure you use a font which actually has that character, since most Japanese fonts do not.
  - For future use, when you have found the correct character, register it as a word in the user dictionary with the pronunciation サる.
- Problems (some problems are linked, and may benefit from a variety of the solutions offered here).
  (1) you cannot find the character you want by pronunciation
    - Try entering the IME Pad to enter the character using handwriting. The Chinese handwriting applet may be better for rare characters.
Use the IME Pad to enter the character using the Stroke, Radical or other dictionaries. Again, Chinese applets may be better.

(2) the character you think is correct is rejected through the validation process and you cannot find the you knew character RLIN used as replacement, or (3) you do not know what the right character should be now that your character has been rejected

Use the Unicode value to enter the character. You may want to look at http://www.unicode.org/charts/unihansearch.html and search for the character using the pronunciation you do know. Click on the possible variants. A valid MARC21 character has a value in the EACC box on the page; a non-valid character has not. Write down the UTF-16 encoding of four numbers (0-9, A-F are the valid “numbers”)

In the Japanese 2003 Natural input method, make sure you have added the Character Code dictionary to the system on the “Dictionary/Auto-tuning” tab on the “Properties” sheet, and have added Unicode to that dictionary. You can either input the character by typing the code, making sure the numbers are full-width and the phrase is considered as one phrase (change to full-width by using the space bar, i.e., 7DD6 is entered starting with hiragana mode as 7DDspace6; DD has made the input mode into alphanumeric and that needs to be undone). Note that not all Unicode values are available this way, and you may need to use the Chinese IME Unicode input methods

You can also locate the character in the Character map applet (in System Tools under Accessories), or type the encoding in Wordpad, and then type Alt-x; once available you can use copy-and-paste to transfer the character to your application

(4) you need access to a rare Japanese character in the Chinese IME or vice versa

At http://www.unicode.org/charts/unihansearch.html you can search for a character using the pronunciation of one language and find the pronunciation in another language, or the Unicode encoding; you can then proceed as under (2).

Of course, since RLIN21 or Voyager do not mind which IME you use to input the character, you can also simply switch IMEs if you do know how to input the character using another language IME. Note that Chinese applets if installed are available from the Japanese IME Pad.
VII Korean Input Method Editor

- **General Issues**
  - Use the Microsoft IME 2003. For Old Hangul Input you need the Korean version of Office.
  - For Korean, extra options for conversion appear in the Word menus with Proofing Tools installed.

- **Settings**
  - Select settings by selecting “Settings” from the options pop-up menu available when clicking on the right triangle of the Language Bar; then select the Korean IME and click “Properties.”
  - Settings available are a choice of 3 keyboards (2 beolsik preferred: this one does not make any distinction between beginning or final consonants; 3 beolsik keyboards do.) Check “delete by Jaso unit” (deletes letter by letter rather than syllable by syllable). Select “Enable extended Hanja” to make more hanja available in candidate lists.

- **Input**
  - Simply enter hangul according to the usual keyboard; syllables are composed on the fly.
  - With a hangul syllable selected, clicking on the Character icon on the Language Bar, or press the Right-Control key, or (in Office only) press Alt-Contr-F7; this will change hangul words into characters and give you the Candidate window; use numbers to select items; Enter to confirm if necessary.
  - Click >> to extend selection in Candidate window (three levels: black, blue and purple)
  - For more information on a character in an extended Candidate window, position mouse over character (or if having used Alt-Contr-F7 in Office, click the open book symbol)
  - The Right-Alt key switches between Korean and English input
  - Within Office you can choose not only hangul to hanja conversion, but also such options as hangul (hanja): 연구 (硏究), or see dictionary definitions
  - A Soft keyboard is available by selecting it from the right triangle options menu on the Language Bar.

- **Adding words to the system dictionary**
  - Click on the “Add Hanja Word” button on the Language Bar (add it if necessary from the right triangle options menu); add characters in first, hangul in the second box

- **RLIN21/Voyager with Unicode issues**
  - Not all characters you can input using the IME are valid MARC21 characters, the standard used for RLIN and Voyager Records. If a character was not in RLIN before, it will be rejected by Voyager and RLIN21 upon validation.
  - Therefore, you may have to be careful when inputting certain characters, since the IME may by default give you a non-MARC21 character
    - E.g., when typing 영 the default choice is 새로운. 새로운 is not a valid MARC21 encoding, the very similar looking 聞 (entered using 聞) is. To get at this character, you have to find that character in another way (using Chinese, using Unicode, using copy-and-paste, using IME handwriting, or using the IME dictionaries: see suggestions below).
    - When you have found the correct character through the ways described below, you should register it in the user dictionary with the pronunciation you want.
  - Problems (some problems are linked, and may benefit from a variety of the solutions offered here)
    - (1) you cannot find the character you want by pronunciation
      - Try entering the IME Pad to enter the character using handwriting. The Chinese handwriting applet may be better for rare characters
      - Use the IME Pad to enter the character using the Stroke, Radical or other dictionaries. Again, Chinese applets may be better.
(2) the character you think is correct is rejected through the validation process and you cannot find the you knew character RLIN used as replacement, or (3) you do not know what the right character should be now that your character has been rejected.

- Use the Unicode value to enter the character. You may want to look at [http://www.unicode.org/charts/unihansearch.html](http://www.unicode.org/charts/unihansearch.html) and search for the character using the pronunciation you do know. Click on the possible variants. A valid MARC21 character has a value in the EACC box on the page; a non-valid character has not. Write down the UTF-16 encoding of four numbers (0-9, A-F are the valid “numbers”)

- You can enter the Unicode value using the Chinese IME Unicode methods described above, or you can also locate the character in the Character map applet (in System Tools under Accessories), or type the encoding in Wordpad, and then type Alt-x; once available you can use copy-and-paste to transfer the character to your application.

(4) you need access to a rare Chinese character in the Korean IME or vice versa.

- At [http://www.unicode.org/charts/unihansearch.html](http://www.unicode.org/charts/unihansearch.html) you can search for a character using the pronunciation of one language and find the pronunciation in another language, or the Unicode encoding; you can then proceed as under (2).

- Of course, since RLIN21 or Voyager do not mind which IME you use to input the character, you can also simply switch IMEs if you do know how to input the character using another language IME. Note that Chinese applets if installed are available from the Korean IME Pad.