

PEPPER GUIDE 3: CREATE, ENTER, AND EDIT A PEPFILE OR PROTOCOL

Entering and Editing PepFiles and Protocols

Creating a PepFile or Protocol

A PepFile (*.pep) is a transcript of a speech sample that is entered in PEPPER and contains X, Y, and Z lines. A protocol is a special PepFile in which the Y and Z lines for each utterance are identical. Protocol files are typically created for transcripts of speech tasks that contain the same stimuli presented in a fixed sequence (e.g., articulation tests, MSAP repetition tasks). If you know that you will need to create many PepFiles for the same assessment task (for instance, a single-word imitation task administered to multiple speakers or administered to the same speaker multiple times), we suggest that you create a protocol file. Protocol files make keyboarding more efficient because the X lines are already entered in the desired order, and the Y and/or Z lines can be edited as needed to conform to a participant's phonetic output.

PepFiles and protocols are created using the same procedure. When you first open PEPPER, you will see the File menu in the upper left-hand corner of the screen. Click on File (using a mouse) to get a list of menu selections, then choose "New" (again, using a mouse), then choose "PepFile Transcript & PVSP Log (.pep)" (using the mouse to highlight the selection if it is not already highlighted in the drop-down menu) and click on the "OK" button. A screen will appear, labeled PEPPER plus a number which corresponds to the number of the file created in the current entry session. The first PepFile created is labeled "PEPPER1", the second PepFile created is labeled "PEPPER2", etc. This label is replaced by a PepFile name when it is saved and named by the keyboarder.

Entering a PepFile or Protocol

When a new PepFile is opened, the cursor is automatically placed at the beginning of the X line of utterance 1. Above the X line is the utterance number in green, followed by a line. To begin entry, type the X line (the gloss, represented with orthographic symbols) of utterance 1.

After you finish typing the X line, press Enter (or Return) to move to the Y line. The keyboard will now be set up according to the PEPPER Proportional font, represented by the white or right hand symbols on the PEPPER Keyboard Layout (Figure 1). Type the Y line, then press Enter. The Z line will automatically appear and be identical to the Y line. (NOTE: All instructions and suggestions for typing X, Y, and Z lines using the PEPPER Keyboard Layout begin on p. 10 with Figure 1 and continue to the end of this guide.)

If you are entering a protocol, you won't make any changes to the Z line. You simply press Enter to continue to the next utterance. If you are entering a PepFile from a speech sample that has been transcribed and the Z line transcription differs from the Y line (the intended form), edit the Z line as necessary, then press Enter to go to the next utterance. (The Y line may also require editing, especially if using PEPPER's "Automatically Fill Y Line" feature; see below.) Notice that on the screen the X line appears in black type, the Y line in blue type, and the Z line in red type. After pressing Enter in the Z line, the next utterance number, followed by a line, appears, and the cursor is placed at the beginning of the X line for the next utterance.

For longer utterances that will not fit on one line on the screen or printout, it is not necessary to hit Return or Enter when the end of the line is reached. Continue to type and the program wraps around the text as necessary. This applies to X, Y, and Z lines. The program is also set up to automatically scroll down as the bottom of the screen is reached while typing.

As mentioned earlier, a special optional feature available in the Edit menu automatically fills in the Y line based on the gloss entered in the X line. The program uses the most common transcription, the previous transcription (if the word occurred previously within the same PepFile), or spelling to fill in the Y line. This feature may be a time saver with some transcripts (if speech is normal) but not with others (if speech is delayed or unusual). Sometimes editing an automatically-filled Y line takes more time than entering the Y line manually. Your preference and skill dictate the use or nonuse of this feature during keyboarding. The feature is turned on and off by clicking on the Edit menu and selecting "Automatically Fill Y Line." A checkmark in front of this selection indicates that the feature is activated. The feature can be activated and deactivated any time during entry.

Another optional feature in the Edit menu allows for characters in the X, Y, and Z lines to be visually aligned on the screen (and printout), or, for a more compact look, not aligned, based on keyboarder preference. To activate or deactivate this feature, click on the Edit menu and select "Align XYZ." A checkmark in front of this selection indicates that the feature is activated.

Error Checking a PepFile or Protocol

The keyboarder should be familiar with the rules governing the formatting of X, Y, and Z lines and the use of symbols and diacritics (see [PEPPER Guide 2](#)). Some symbols (angle brackets, square brackets, parentheses, punctuation marks) are not allowed in the Y and Z lines. Other symbols, like the glottal stop (ʔ), the synchronic tie (◌̣), and the underbar (◌̣), should never be entered in the Y line. Finally, diacritic symbols that are always considered clinical distortion errors (e.g., dentalized (◌̣) or lateralized (◌̣) fricatives, derhotacized /ṛ/) should be entered in the Z line only.

Some error checking in PEPPER is done "on line." This means that the program is checking your entry as you're entering. When a likely error is identified, such as a segment

correspondence mismatch between the Y and Z lines, an error message will come up on the screen indicating the nature of the error, and you will be required to correct it before you can move on to the next utterance.

If a diacritic symbol is used to modify a main phonetic symbol in the Y line, a diacritic from the same set of symbols (e.g., nasal symbols, stop release symbols) must be used to modify the corresponding phonetic symbol in the Z line. If the main symbol and the diacritic symbol are the same in both the Y and Z lines, there is a Y-Z "match" and therefore no speech error. If the main symbol is the same in the Y and Z lines and the diacritic symbols are different but from the same set of symbols, there is a Y-Z "mismatch" and therefore a distortion error. When the main phonetic symbol is the same (i.e., there is not a substitution or deletion of the sound), an error message will be displayed if there is a diacritic symbol in the Y line but no diacritic symbol in the Z line, or if the diacritic symbol in the Z line differs from the corresponding diacritic symbol in the Y line and is from a different diacritic set.

CAUTION: PEPPER does not catch *all* "illegal" (not conforming to PEPPER formatting or transcription guidelines) situations that may be encountered during entry. In particular, PEPPER accepts certain combinations of diacritics and phonemes that make no sense. Therefore, the keyboarder must be alert to possible errors in the transcript and consult with the transcriber if necessary.

Editing a PepFile or Protocol

Editing can be done any time during the entry process by using the mouse and/or other special keys described in Figure 1. Use the mouse, the scroll bar, and arrow keys to move around in the PepFile; use the backspace and delete keys to delete characters; use the home or end key to move to the start or end of a line, respectively. Use Ctrl with the arrow keys to move horizontally word-by-word or vertically utterance-by-utterance.

Use "Go To..." on the Edit menu to move directly to a particular utterance number. Use the other six commands on the Edit menu to find or to find and replace text in the X, Y, or Z line.

PEPPER provides a dictionary of possible alternative transcriptions for a particular word. If you want to edit a word in the Y line (which may be the case if you're using the "Fill Y Line" feature), one option is to place the cursor on that word using the mouse and the left mouse button, and then press the right mouse button to display a list of alternative transcriptions of the word. Using the mouse and the left mouse button, the desired transcription of the word can be selected from the list, and the existing transcription of the word in the Y line will be replaced with the selected alternative. This feature may or may not be a time saver, depending on the degree to which a word must be edited. Another potentially quicker option is to delete, replace, and/or add characters as needed rather than to scan and select a particular alternative transcription of a word from a long list.

Whole utterances can be easily deleted and inserted. To delete an utterance, position the cursor anywhere in the X, Y, or Z line of the utterance, go to the Edit menu, and select "Delete Utterance." The utterance will be deleted, and the remaining utterances will automatically be renumbered. To insert an utterance, position the cursor anywhere in the X, Y or Z line of the utterance following the place where the new utterance is to be inserted, go to the Edit menu, and select "Insert Utterance." The new utterance will appear, and the cursor will appear at the beginning of the X line of the new, inserted utterance. You can then enter the X, Y, and Z lines as you would for any other utterance. As with "Delete Utterance," other utterances within the PepFile will automatically be renumbered when an utterance is inserted.

Saving a New PepFile or Protocol

A PepFile or protocol can be saved at any time during entry. Go to the File menu and choose "Save." The first time you save, a screen will appear wherein you can select the location to store the PepFile, name the PepFile or protocol, and select the type of file (indicated by an extension--in this case *.pep). Then click on the "Save" button. (Tip: We find it useful and efficient to save protocol files in their own separate location/folder.) The Save screen will disappear, and the specified PepFile name will replace the "PEPPER#" label in the upper left-hand corner of the screen. It is a good idea to save several times while entering a transcript, especially if it's a long one, to lessen the chances of losing large amounts of entered, unsaved information if the program unexpectedly shuts down. Once you've done an initial save wherein you've named the PepFile or protocol, subsequent saves will not bring up the initial Save screen described earlier. If you enter or edit utterances and do not save before attempting to close a PepFile or exit PEPPER, the program will prompt you with a message asking if you wish to save the PepFile or save the changes made to the PepFile since your last save.

*Note: If you are saving a new PepFile that has been created from an existing protocol, use "Save As..." rather than "Save," or your protocol file will be replaced with the new edited PepFile. See **Using a Protocol to Create New PepFiles** below. As a safeguard to prevent inadvertently replacing a protocol file, PEPPER will display the "Save As" screen when you select "Save" (or type Ctrl+S), and you will be prompted to save the new PepFile using a different name.*

Tips for Naming a PepFile or Protocol

It is useful to develop a system for naming PepFiles and protocols. Note that Microsoft Windows rules and restrictions for file naming apply to PepFile names. Consider the following:

- A simple numbering system can be used if entering more than one speech sample for the same participant (e.g., 'JW1,' 'JW2,' 'JW3,' etc.) to easily identify each sample by its PepFile name.

- A coding scheme can be developed and incorporated into PepFile names for different types of speech samples (conversational samples, articulation tests, etc.), such as 'JW-CS1,' 'JW-AT1,' 'JW-AT2,' etc.
- A unique PepFile naming scheme can be used for protocol files, using a system that identifies them by speech task and/or identifies them as protocols rather than other types of PepFiles. (We have found that storing the protocol files in a separate folder labeled "Protocols" adequately addresses this issue.)

NOTE: Incorporating identifying, personal, or sensitive participant information into a PepFile name is NOT recommended.

PepFile Naming Requirements for MSAP Sources

The Madison Speech Assessment Protocol ([MSAP](#)) includes speech tasks that are administered and audio and/or video recorded during an assessment session, and later glossed (if needed), phonetically transcribed, coded for prosody-voice (the conversational sample only), and/or acoustically analyzed. The resultant perceptual and acoustic data are used to assess a participant's segmental and suprasegmental speech output and to assign a speech classification ([Speech Disorders Classification System \[SDCS\]](#)). Each MSAP speech task, also called a *source* in PEPPER, may contribute to one or more PEPPER outputs (profiles, reports, analyses, indices). PEPPER identifies each source based on its PepFile name. Therefore, it is necessary to follow specific naming conventions for MSAP tasks, especially if acoustic analyses will be performed.

The following table provides the PepFile naming conventions for the MSAP tasks that are entered and saved as PepFiles in PEPPER. The bolded portion of the PepFile name examples in the rightmost column represents how and where the string of characters must be present in the PepFile name, because PEPPER identifies the source based on that string. The characters can be upper or lower case. Any characters preceding or following the required string are for illustrative purposes only and can be modified as needed, with the guidelines from the previous section kept in mind. As some of the examples in the table demonstrate, characters following the required character string begin with an underbar (_).

Task/Source	Abbreviation	Required Characters	Pepfile Name Example
Conversational Sample	CS	-c# (where the # can be 1, 2, 3, etc.)	abc2- c1 . <i>pep</i>
Goldman-Fristoe Test of Articulation-2 (Goldman & Fristoe, 2000)	AT	-GF	1234- gf . <i>pep</i>
Lexical Stress Task	LST	-LST	smile- LST _jd. <i>pep</i>
Challenging Words Task	CWT	-CWT	Spch- CWT . <i>pep</i>
Vowel Task 1	VT1	-VT1	R2D2- vt1 . <i>pep</i>
Vowel Task 2	VT2	-VT2	HB2U- VT2 . <i>pep</i>
Vowel Task 3	VT3	-VT3	EIPre- VT3 _1. <i>pep</i>

Syllable Repetition Task	SRT	-SRT	2good- SRT . <i>pep</i>
Nonword Repetition Task (Dollaghan & Campbell, 1998)	NRT	-NRT	CDTC- NRT . <i>pep</i>
Emphatic Stress Task	EST	-EST	Bob- EST . <i>pep</i>
Rhotics and Sibilants Task	RST	-RST	RandS- RST _glp. <i>pep</i>
Multisyllabic Words Task 1 (Catts, 1986)	MWT1	-MWT1	child- MWT1 . <i>pep</i>
Multisyllabic Words Task 2 (Catts, 1986)	MWT2	-MWT2	Adult- MWT2 . <i>pep</i>
Speech Phrases Task (Catts, 1986)	SPT	-SPT	100KID- SPT _2a. <i>pep</i>
Diadochokinesis Task	DDK	-DDK	pataka- ddk . <i>pep</i>
Sustained Vowel Task	SVT	-SVT	aaaa- SVT . <i>pep</i>
Sustained Consonant Task	SCT	-SCT	FFFF- SCT . <i>pep</i>

Printing a PepFile or Protocol

The method used to print PepFiles and protocols is similar to that used in other Windows programs. Under the File menu, the “Print...” selection allows you to print the PepFile or protocol with the option of printing the whole document (selection “All”) or a page or range of pages (selection “Pages”). Note that if you wish to print one page only, specify that page number in both the “From” and “To” fields in the “Print” window. These fields should also be filled in if you wish to specify a range of pages. The number of copies you wish to print can also be specified. Click on the “OK” button to print once you’re satisfied with the printing conditions.

Choosing “Print Preview” on the File menu allows you to see a whole page of a transcript as it will appear on your printout. You can zoom in or out as necessary, and you can print from this screen as well by clicking on the corresponding buttons that appear across the top of the screen. Choosing “Print Setup...” on the File menu allows you to specify a printer and the size and orientation (Portrait or Landscape) of your paper (Portrait orientation is preferable).

If a color printer is used, colors as they appear on the screen appear on the printout. Otherwise, all type appears black on the printout. A heading across the top of each printed page includes the PepFile or protocol name, the date the PepFile was modified, the date the PepFile was printed, and finally the page number in the upper right hand corner.

Closing a PepFile or Protocol

To exit a PepFile or protocol, bring up the File menu and select “Close” or click on the “X” (gray "close" button) in the upper right hand corner of the PepFile screen. (Remember, if you’ve forgotten to save the file or any changes made to it since your last save, you’ll get

a prompt to save before PEPPER closes the file.) Closing a file will bring up a blank gray screen from which you can create a new file, open an existing file, or exit the PEPPER program. Choosing "Exit" in the File menu or clicking on the red "X" in the upper right hand corner of the program screen closes any open file(s), prompts you to save if you haven't already done so, and then closes the PEPPER program.

Opening an Existing PepFile or Protocol

To open a previously created PepFile or protocol in PEPPER, go to the File menu and select "Open." A screen appears wherein you can choose the location of the already created PepFile or protocol, the PepFile or protocol name, and the file type (*.pep). After choosing a directory and/or subdirectory, an alphabetical list of all the files of the specified type in that (sub)directory appears. To open the desired PepFile or protocol from the list, click twice on it with the left mouse button, click once on it with the left mouse button (which will bring up the name in the File Name field) and click the "Open" button that appears on the screen, or manually type the file name in the File Name field and click on the "Open" button.

When you click on the File menu within a PEPPER session, a list of the four (or fewer) most recently accessed PepFiles appears above "Exit." If you wish to open one of the PepFiles listed, use the left mouse button to single-click on the file name, and it will come up on the screen.

After opening a previously created PepFile or protocol using one of the methods described above, you can view or edit its contents. See special instructions next for updating/editing protocols and using protocols to create new PepFiles.

Using a Protocol to Create New PepFiles

To use a protocol file to create a new PepFile, open the protocol file and edit the Z lines and corresponding Y lines so that they match the transcript you are entering. Once all changes have been made, choose "Save As..." from the File menu and save the PepFile under a new name (and location if applicable). The original protocol file will remain unchanged, and the new PepFile will be created and saved.

Editing or Updating a Previously Created Protocol

To make changes to a protocol file, open it and edit it as needed. PEPPER will identify the file as being a protocol and, to safeguard against your inadvertently overwriting the protocol with an individual speaker's results, will direct you to the "Save As" screen even if you choose "Save" or type Ctrl+S. Therefore, to change or update a protocol file, you must specify the same name it had before in the File name field in the "Save As" window, and then click "Yes" when asked to confirm that you want to replace it.

Exiting the PEPPER Program

To exit the PEPPER program, choose “Exit” in the File menu, or use the left mouse button to click on the “X” (close button) that appears in the upper right hand corner of the program screen.

References

- Catts, H. (1986). Speech production/phonological deficits in reading disordered children. *Journal of Learning Disabilities, 19*, 574-588.
- Dollaghan, C., & Campbell, T.F. (1998). Nonword repetition and child language impairment. *Journal of Speech, Language, and Hearing Research, 41*, 1136-1146.
- Goldman, R., & Fristoe, M. (2000). *Goldman Fristoe Test of Articulation* (2nd ed.). Circle Pines, MN: AGS.

The PEPPER Keyboard Layout

~	3	!	˜	@	˜	#	˜	\$	ˆ	%	ˆ	^	ˆ	&	ˆ	*	ˆ	(ˆ)	ˆ	_	ˆ	+	ˆ
`	o	1	ə	2	ɛ	3	e	4	ʌ	5	æ	6	ɜ	7	u	8	i	9	ɔ	0	a	-	ˉ	=	?
		Q	o:	W	o>	E	o+	R	o	T	o+	Y	o†	U	o>	I	o	O	o	P	o	{	o	}	˜
		q	æ	w	w	e	a	r	r	t	t	y	j	u	u	i	i	o	o	p	p	[ˉ]	ˉ
		A	o	S	o	D	o	F	o	G	o	H	o	J	o	K	o	L	o	:	o	"	o		o
		a	ŋ	s	s	d	d	f	f	g	g	h	h	j	ɟ	k	k	l	l	;	ð	'	θ	\	*
		Z	o	X	o	C	o	V	o	B	o	N	o	M	o	<	< on	>	> off	?	o				
		z	z	x	ɜ	c	ɟ	v	v	b	b	n	n	m	m	,	,	.	tʃ	/	/				

Figure 1. The PEPPER keyboard layout.

Each key is divided into two areas. The symbols in the gray shaded areas are the labels on your keyboard (the upper symbol is the shifted key). These symbols (with some exceptions--see the next section) are typed in the X line; the shifted key is used to type capital letters, angle brackets, parentheses, question marks, and asterisks. (Note: The circle symbol (shift + \ key) in the white area can be typed in the X line.)

The characters in the white corresponding areas are the locations of the PEPPER font symbols typed in the Y and Z lines. Where possible, the main PEPPER font symbols are arranged to correspond to English orthographic symbols. Most of the vowel and consonant orthographic symbols without English orthographic equivalents are located in the top and bottom rows, respectively. Diacritic symbols, seen in the upper white areas of the keyboard, are typed using the shifted keys. NOTE: The o character in the white upper area is used as a placeholder to show the position of each diacritic symbol relative to the main symbol. When the diacritic is typed, the o does not appear.

Your keyboard may be laid out slightly differently than the keyboard shown above. Regardless of a character's location on your keyboard, the PEPPER font symbol displays and prints in the Y or Z line when you type the corresponding character shown in gray. Some keyboard variations are as follows: (1) the left-most key in the first row (~) appears to the right of the third row, and (2) the right-most key in the third row (|) appears to the right of the first or second row or to the left or right of the fourth row.

Helpful Keyboarding Tips

X Line Entry

Not all symbols in the gray shaded areas in the PEPPER keyboard layout can be entered in the X line. Symbols that are allowed in the X line include

- All 26 alphabet characters (lower case and shifted upper case)
- Parentheses (used to enclose bound morphemes)
- Square brackets (used to enclose comments)
- Angle brackets (for disregarded words)
- The forward slash '/' (for either/or words)
- The punctuation symbols for comma (,), apostrophe ('), and question mark (?)
- The asterisk (for unintelligible syllables and words)

No other symbols in the gray shaded areas of the PEPPER keyboard can be entered in the X line. **Punctuation marks other than the comma, apostrophe, and question mark cannot be entered in the X line. Numerals cannot be entered in the X line;** they must be spelled and typed out using alphabetic symbols (*four, thirtythree, one hundred*, etc.). Hyphens cannot be entered in the X line and are therefore omitted when typing normally hyphenated words.

One symbol in the white area of the PEPPER keyboard can be typed in the X line. The symbol for unsure, which is entered either by typing shift + \ to surround/circle an individual character or by typing F4 to surround/circle a word, can be typed in the X line. To "uncircle" a character or word, type shift + \ or F4, respectively. The backspace key can also be used to delete the unsure symbol.

Diphthong Entry

Diphthongs can be entered in the Y and Z lines with either one or two (first main vowel with overbar + second main vowel) keystrokes as follows

Diphthong	One Keystroke	Two Keystrokes (white area on keyboard layout)
āī	F2 key	type 'e' key, then ']' key
āū	F3 key	type 'e' key, then '[' key
ēī	F7 key	type '3' key, then ']' key
ōū	F8 key	type 'o' key, then '[' key
ōī	F9 key	type '9' key, then ']' key

Onglides and Offglides

Any phonetic symbol can be entered as an onglide or offglide (also known as an intrusive sound or sound addition) to a main phonetic symbol in the Y and Z lines. If an intrusive

(either an onglide or offglide) occurs between two phonemes and you are unsure whether to type it as an offglide to the first phoneme or an onglide to the second phoneme, "attach it to" the phoneme which it most likely modifies (possibly the more difficult sound to articulate) and/or with the phoneme with which it shares the most sound characteristics (taking into account whether the intrusive sound is a vowel or consonant; and its place, manner, and voicing features). To enter an intrusive

- Enter an onglide by typing the '<' (shift ,) key, followed by the intrusive phoneme symbol *before typing the main phoneme symbol*
- Enter an offglide by typing the '>' (shift .) key, followed by the intrusive phoneme symbol *after typing the main phoneme symbol*

Note that diacritic symbols cannot be affixed to onglides and offglides.

Description of Keyboard Usage

The following reference table, also available for viewing in the Help section of PEPPER (see "PEPPER Keyboard Layout" in Contents or Index), augments the information provided above. It includes a description of each character used in PepFile entry. The entries in this reference table are sequenced as follows: (1) the special function keys are described; (2) characters used only in the X line are described; (3) characters used in two or more lines are described; and (4) characters used only in the Z line are described. While going through this table, you may find it useful to locate each character on the keyboard layout on p. 10.

Character	Purpose, Symbol(s), Description	Line(s) in Which Permitted	Description/How to Enter
Special Keys			
Backspace	To delete characters	X, Y, Z	The backspace key functions as usual to delete typed characters preceding the cursor.
Shift	To capitalize or enter punctuation symbols or '*' in X; for diacritics in Y/Z	X, Y, Z	Hold down one of the two SHIFT keys and type another key to produce the corresponding capital letter, asterisk, or punctuation symbol in the X line; and to type the corresponding diacritic in the Y/Z line(s)
F4	To circle words in X or Z line	X, Z	After the last character in a word, press the F4 key to circle the entire word (or to uncircle the word if it is already circled).
Space	To insert spaces between words	X, Y, Z	PEPPER requires one space between words and ignores any additional spaces between words.
Delete	To delete the character after the cursor	X, Y, Z	Press the Delete key to erase a character following the cursor. Successive presses erase all entries in the reverse order in which they were entered; therefore, where indicated in this table, the correct sequence of character entries must be followed.
Orthographic/Phonetic Keys			
English Alphabet	a-z (lower case and upper case capitals)	X only	In the X line, press one of the alphabet keys to get the corresponding letter. Type SHIFT + the alphabet key for a capital letter. Separate all words

			with one space. Press ENTER to move from the X line to the Y line.
Punctuation	, ' ?	X only	The unshifted comma (,) and apostrophe (') keys are used to enter commas and apostrophes in the X line; the question mark is entered by typing SHIFT + the / key. No other punctuation marks are available for entry in the X line.
Parentheses	()	X only	Parentheses, used to enclose bound morphemes, are entered by pressing SHIFT plus the left or right parenthesis key.
Comments	[]	X only	Unshifted square brackets, used to enclose comments, may be entered anywhere in the X line. Comments, which may be abbreviated, are used for descriptive purposes only and do not affect PEPPER outputs. See PEPPER Help for additional information, including how to get a Comments Summary.
Disregard	< >	X only	The Disregard characters (angle brackets), plus the following 3 characters in this table, belong to a set of "questionable words" symbols that are used to exclude sounds, part words, or words in a PepFile from certain quantitative analyses. See pp. 26-29 in PG2 for rules for the use of Disregards. Press SHIFT and the left and right angle brackets to enclose sounds, syllables, and words in the X line that should be disregarded in PEPPER outputs. Observe appropriate spacing and enter corresponding transcription entries (without angle brackets) in the Y and Z lines.
Either/Or	/	X only	An Either/Or symbol (unshifted forward slash) separates two likely glosses for a word, with the first word being the more likely, given context and known speaker variables (i.e., him/he, want/went). In the Y and Z lines, the corresponding entry is based on the first of the two words. See p. 29 in PG2 for rules for the use of Either/Ors.
Unsure	□	X, Z	The Unsure symbol (which represents circling although it appears rectangular in PEPPER) is used to enclose any segment where the gloss (X line) or transcription (Z line) is in doubt, and is entered by pressing SHIFT + \ after each questionable segment. (The F4 key, as previously described, can be used to circle or uncircle a whole word.) When entering the Unsure symbol in the Z line, follow this typing sequence: (1) enter the main character, (2) enter any associated diacritics, and (3) enter the Unsure (box) symbol. See pp. 29-30 in PG2 for rules for the use of Unsures.
Unintelligible	*	X, Y, Z	The Unintelligible symbol (i.e., the symbol of last resort) is used for <i>each syllable</i> in the X line that cannot be glossed and for syllables in the Y and Z lines that cannot be transcribed. A multisyllabic

			<p>word is represented by adjacent asterisks (e.g. an unintelligible two-syllable word is entered **), with spaces between symbols to indicate different words. See pp.30-32 in PG2 for rules for the use of Unintelligibles.</p> <p>To enter an Unintelligible symbol in the X line, type SHIFT + 8. To enter an Unintelligible symbol in the Y and Z lines, type the unshifted \ key.</p>
Phonetic Alphabet	All vowels, diphthongs, and consonants	Y, Z	<p>In PEPPER, the keyboard switches from the English alphabet to a phonetic alphabet when ENTER is pressed to move from the X line to the Y line and remains in the latter mode for the Z line. The available phonetic characters for vowels and consonants are located in the white areas in the keyboard layout on p. 9. The glottal stop symbol [ʔ] can be entered as a main character or onglide/offglide only in the Z line.</p>
Diacritics	All diacritics except those noted below	Y, Z	<p>All diacritic characters except onglides are entered after the main character has been entered by pressing and holding the SHIFT key, followed by the desired diacritic key(s). Onglides are typed before the main character is entered. PEPPER positions all diacritic symbols appropriately relative to the main character and to other diacritics.</p>
Juncture Symbols	+ ↓ ↑ →	Y, Z	<p>Juncture symbols, used for descriptive purposes only, are typically entered only in the Z line, although they can be entered in the Y line too. PEPPER stores and reproduces them on some analyses outputs, but they are never included in analyses for Y-Z correspondence or for phonetic/phonologic correctness. (See p. 40 in PG2).</p> <p>To enter a juncture symbol, first enter the main character and then the desired juncture symbol. Only one juncture symbol per main character is allowed and should be followed by a space if followed by another word.</p>
Stress Symbols	1 2 3	Y, Z	<p>Stress symbols, used to describe syllable or word stress, are typically entered only in the Z line, although they can be entered in the Y line too. PEPPER stores and reproduces them on some analyses outputs, but they are never included in analyses for Y-Z correspondence or for phonetic/phonologic correctness. (See p. 40 in PG2).</p> <p>To enter a stress symbol, first enter the main vowel or syllabic consonant and then the desired stress symbol. Note that only one stress symbol per main character is allowed and that a stress symbol should not be entered on a non-syllabic consonant.</p>

Syllabic Consonants	[,]	Y, Z	<p>PEPPER requires that there is at least one vowel or syllabic consonant present in each non-questionable word in a PepFile and displays an error message if there is not.</p> <p>To enter the syllabic diacritic, first enter the symbol for the consonant, then hold down the SHIFT key and type the / key.</p>
Onglides and Offglides	Any phonetic character--vowels, diphthongs, consonants	Y, Z	<p>Onglides and offglides, entered before and after a main character, respectively, are also called intrusives or sound additions. Onglides or offglides should be entered so that they are "attached" to the correct main character (see guidelines on pp. 10-11) because computations in the PEPPER analyses will follow the way the intrusive sounds were entered. (p. 43 in PG2).</p> <p>To enter an onglide, (1) type SHIFT <, (2) enter the phonetic symbol for the onglide, and (3) enter the main character. To enter an offglide, (1) enter the main character, (2) type SHIFT >, and (3) enter the phonetic symbol for the offglide. Note that diacritics cannot be affixed to onglides or offglides, and entering a diphthong as an onglide or offglide, while possible, is discouraged.</p>
Tied Sounds	—	Z only	<p>The tied diacritic (synchronic tie), available in the Z line only, is used to represent phoneme additions while maintaining PEPPER's mandatory 1:1 segmental correspondence between the Y and Z lines. For example, if a child says "hair" for "air," the /h/ can be attached like this: [h̄ær]. Tied phonemes are treated as substitutions in PEPPER analyses; any associated diacritics are ignored in quantitative analyses. (pp. 44-45 in PG2).</p> <p>To enter a synchronic tie symbol, (1) enter the first main phonetic character, (2) hold down the SHIFT key and type the = key, and (3) enter the second main phonetic character. All diacritic symbols other than the onglide symbol must be entered after the second main phonetic character. Diacritic symbols cannot be attached individually to one of the two tied sounds; any diacritics are interpreted as belonging to both of the tied segments, and any diacritic symbols above or below the tied sounds will appear centered between the two.</p>
Missing Segments	—	Z only	<p>Missing segments (i.e., sound omissions or deletions) in the Z line are indicated by the underbar symbol in order to maintain segmental correspondence between the Y and Z lines (pp. 56-60 in PG2). To enter the underbar symbol (in the Z line only), press the ' _ ' key.</p>