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Software FURCH-DIAOULEK 1.7
(Quick start)

Abstract

Introduction

The present release is the combination of two different softwares, “Diaoulek 1.6” and “Furch 0.1”. Software “Diaoulek” will help you to organize and learn your vocabulary in the language that you want to study and “Furch” will help you to read plain texts. If a text is displayed by “Furch” on your screen, you can move the cursor on a word and by a simple click open a bilingual dictionary and have the meaning of that word. As both softwares are integrated, you can also select the clicked

word for a future learning with “Diaoulek”.

The Breton word “furch” is the radical of the verb “furchal” which means: to look for, to search. The meaning of “furch” may thus be “look”, “search” at the imperative or still it looks for, it searches (present of the indicative, third person of the singular). But looking or searching for what ? Well, for words into dictionaries or more exactly into your whole data-base, so also into your lessons.

The development of software “Furch” started at the beginning of the 21st century but was stopped as there was no free bilingual electronic dictionary available at that time. That situation has changed somewhat with the series of the “FreeDic” dictionaries. In particular, we have the Breton-French and French-Breton dictionaries whose first author was Tomaz Jacquet and are now maintained and extended by Denis Arnaud. They have both more than 38,000 entries. Even if the situation is not so favorable for other languages, a software like “Furch” can be quite useful. With it you can display text files or capture text on the web with your mouse, make some editing and store them later. As explained above, the displayed text can be clicked and “Furch” will search the dictionary for the word under your mouse cursor. At present time “Furch” is only at version 0.1 and it will only work for Breton to French. Many features are lacking but, hopefully, it will still be helpful for the end user.

We will now present with more details first “ Diaoulek”, the vocabulary manager and then “Furch”, your assistant for reading texts.

The vocabulary manager “Diaoulek”.

The vocabulary which you are learning in a language formerly unknown to you is your “capital”. You try to increase your capital but this one keeps wearing away (we forget), it is necessary to periodically review your vocabulary while avoiding to waste time in reviewing already known words. You also have to learn new words, hopefully with the greatest efficiency, etc... All these needs imply a lot of management and it would be good to optimize that task. Software “Diaoulek” is a vocabulary manager. To accomplish that job, the vocabulary is organized into lessons. We have four different kinds of lessons :

1. **The short lived lessons,** they last only during the time spent to learn them. As we certainly not want to lose information, you may guess that these lessons are only lists of pointers towards the places where the actual information is stored. These lists of pointers are generated by the software itself. They are, for example, the 20 words that the software considers as the most badly known ones among those already studied. The short lived lessons receive the number “zero”.
2. **The provisional lessons.** They are said to be “Prov” lessons. Their default life span is 5 days but you can recover them for at least 5 other days after their official disappearance. With the default settings, the recovery time is 78 days . However, they finally disappear completely and, in order not to lose information, they are, as the short lived lessons, made of pointers towards the location of the true information. The “Prov” lessons are created when you stop learning a lesson and they are made of selected words, for example those which you don't knew. They can also be created by a selection of words in the direct or inverse dictionaries. These dictionaries are the sum of all the words in the permanent lessons plus the words in the “freedic” or “freelang” dictionaries if they have been installed. It is possible to sum up several “Prov” lessons into a short lived lesson and to generate another “Prov” lesson with the badly known words. Consequently, one word can stay into the “Prov” lessons as long as it has not been declared as known during at least 5 consecutive days. If used well, the “Prov” lessons may become your main tool to manage vocabulary. This is

particularly true since version 1.5 of “Diaoulek” because a sequence of oblivion has been introduced for the “Prov” lessons. Thought they are simple text files, the “Prov” lessons should not be directly modified by the student with a text editor.

3. **Your personal lessons.** They are said to be the “Own” lessons. They are created in the same way that the “Prov” lessons are but their life span in infinite. Since version 1.5 of the software, you can also automatically generate “Own” lesson from the “Freelang” or “Freedic” dictionaries. You can modify these lessons with a simple text editor. You can add words in the simplified way as in the file “ex_simple_bis.txt”, or in a more complete way as in the files “sa1.txt” or “ex2.txt”. These lessons are located into a directory named “OWN” and this simplify the management because the software, at start, will systematically load the contains of the “OWN” directory. As for the “Prov” lessons, we have commands to accomplish simple operations on these files as addition or deletion.
4. **The data-base lessons.** These lessons are in fact personal lessons of someone else, but they have been published and everybody can use them. They can be automatically downloaded from the “alnfurch” web pages and they are managed by the software “Diaoulek”. You can study these lessons one at a time but software “Diaoulek” is also making direct and inverse dictionaries from all these lessons plus your “Own” ones,. This allows you to select entries (one word in some lesson and another word in another lesson...) and with these selected entries, you will make your own “Prov” or “Own” lessons. At the date of November 2015, we have more than 310 Breton/French lessons and a dozen of English/French lessons. All the Breton/French lessons are going along with audio files. They can be loaded or updated by the command “!update”

And now, what is new in version 1.6 of software “Diaoulek” ?

- Inclusion of “Svox pico”, a text to speech software for French, English, German, Spanish and Italian.
- The possibility to choose at start the language to be studied.
- Improvement of the order “!update” and the possibility to exclude some files from the updating.

And what was new in version 1.5 of software “Diaoulek” ? Only two features but very important ones :

- Introduction of a sequence of oblivion for the “Prov” lessons.
- The possibility to use the Tomaz Jacquet's Breton-French dictionary.

Software setup.

Software “Diaoulek” version 1.6 can work under Windows or Linux. It was written under Linux Mint 17 (bureau Mate) and it was compiled for Windows with “Mingw”. The result of this compilation has been tested with “wine”; and finally under WinXP and Win7. A “Windows” installer computed by “Inno Setup5” under “wine” is also available.

Setting-up under Windows.

As the « Windows » version have an installer, this greatly simplifies the software setting-up and configuration. You will download the file “Diaoulek-1-6.setup.exe”. By double-clicking on this executable file, you will install “Diaoulek” by default in “Program Files\Diaou-1-6”. However, for a matter of read/write rights, it is recommended under Win7 to install the software into the directory

“ C:\Users\Your_User_Name\Diaou-1-6”. Of course, here “Your_User_Name” stands for your logging name. You can also install your software in another place, for example on a USB key as in “J:\Diaou-1-6” or even in a directory with a more complicated path. However, you should keep in mind that softwares developed for Linux have difficulties with file names containing spaces or accentuated letters. Don't create yourself such file names even if you can use names like “Program Files”.

Setting-up under Linux.

There are more “Linux” distributions than days in the year and there is not much agreement between them. Thus, you will be obliged to compile yourself the software and my contribution will be limited to some advises and in giving you the source code and the “makefile”. This will allow you to make the compilation. You should succeed because “Diaoulek” is only using standard libraries and it was developed under a derivative of Debian/Ubuntu. However, if for some reason, you are unable to make it, you still can install “wine” and use the Windows installer “Diaoulek-1-6.setup.exe”. This will work well because this file was created and tested under Linux Mint 17 with “wine”.

Software “Diaoulek” is written in C (gcc) and is only using standard libraries. You must install the graphic library “gtk2+”, then the “glib” which is an extension of “gcc” and is included, at least for Ubuntu, into “gtk2”. You also need for the sound the library “libsndfile” and for the connexion to Internet, the library “libcurl”. You also need the “ttspico” library for the voice synthesis. In order to make the compilation possible, all these libraries must be installed with their “headerfiles” and you must have the “make” utility.

The source code of “Diaoulek” is given to you with its “headerfiles” and some other files necessary for the documentation and the internationalization. You have also the “makefile” whose name is here “makediaou”. It is then enough for you to write in a terminal the command:

make -f makediaou > w1

and you will get the result of the compilation and the “log” of the program launch into a “w1” file.

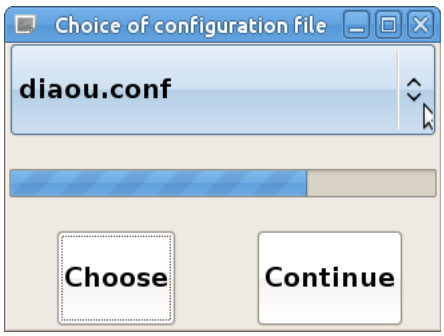
The errors or difficulties can only come from missing libraries or “headerfiles”. As software “Diaoulek” is using hyper-classical libraries, you should succeed in compiling without too many problems !

First launch of software « Diaoulek ».

Software “Diaoulek” is given to you as a most stripped down version, in order to minimize the size of the archive which you have to download, but this version is a fully functional one and that allows us to test the downloaded software. This will be done now. The software is automatically launched after set up but you can also start it by double-clicking on the file “diaou.exe” (Windows) or “diaou.x” (Linux). With software “Diaoulek”, you can learn more than one language, each language to be learned must have its “configuration” file. This file will be called “diaou.conf” for the language that you study much often (which is said here the default language). For the configuration file of the other languages, you can take any name with the extension “.conf”.

In the configuration that you have downloaded, the Breton is the main language to be learned (configuration file : diaou.conf) and the English is the second language (configuration file : diaou_en.conf). By default, the software starts on the the main language and later you can shift to another language by the order : “!chconf name_file.conf” where “name_file.conf” is the name of the

configuration file for the language you want to study. This is not very convenient if you want to learn first a secondary language, specially if you have many lessons to load for the primary language. This is why when the software starts, it will give you 10 seconds to choose your configuration file :



Ten seconds is a lot of time if you are in a hurry and want to learn the language of the default configuration file. Pressing the “Continue button” will stop the count down and you will immediately load the “diaou.conf” file. On the contrary, pressing the “Choose” button will also stop the count down but will let you time to change the configuration file. This is done by a mouse click when the mouse pointer is positioned like on the above picture. The program will then display all the configuration files which are on the directory of the executable and will allow you to choose one of them. You will then press once on the “Continue” button to restart the count down and even twice if you want to load immediately the chosen configuration file.

For the moment, we will start on the default configuration file “diaou.conf”, immediately if we press on the “Continue” button or after 10 seconds if we do nothing. We will load the Breton-French lessons. The dialogue with the user is done in French. This may be a problem for English speakers and we can change that. In the file “Diaou-1-6/diaou.conf”, we will change the line:

Lang :> FR <:

into:

Lang :> EN <:

We can now restart the software and we will obtain something which looks likes figure 1:

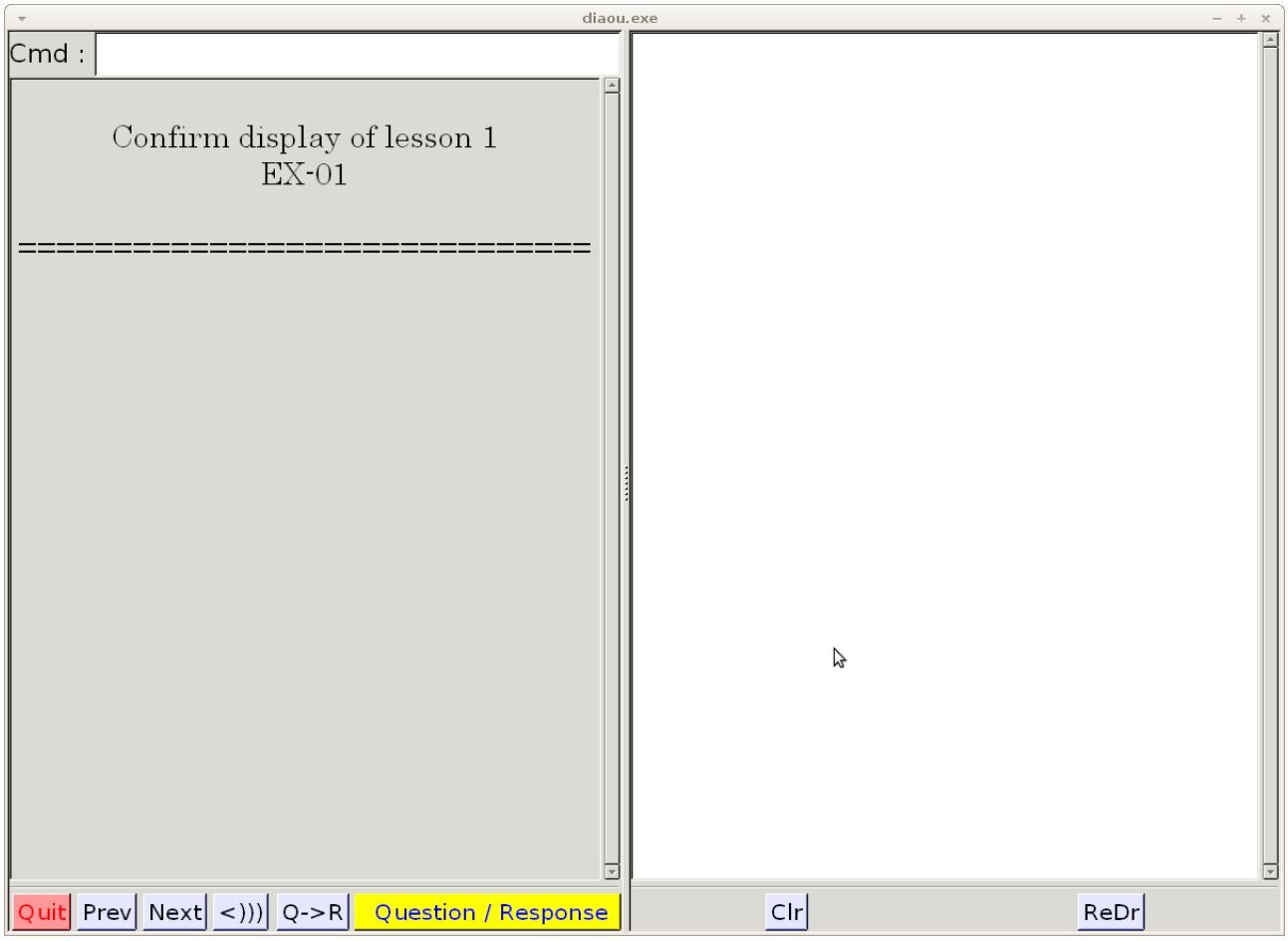


Figure 1 (QSen-1.png) Study of a lesson.

Figure 1 will allow us to define the windows and the use of the various buttons. We have on figure 1 two windows and both will be useful. The left window is the main window and is almost exclusively in use for the display of the vocabulary. At the top of the left window, you have a command line which can receive orders. You can write “help” on that command line and you will see the list of all the possible orders. One can hope that, one day, this command line will be replaced by buttons but “Diaoulek” is still in development. At the bottom of the left window, you have a series of buttons. The button “Quit” must be used to leave gracefully the application. You should avoid clicking on the little cross at the top right place of the application window, this would be equivalent to a crash of the program ! The buttons “Prev” (**Prev**ious) and “Next” are used to navigate through the list of the lessons. For now, you have only 2 lessons so that will be easy ! When you have downloaded other lessons (more than 310 in Breton/French), you can reach them by writing on the command line their alias or their ordering number. The following button is for the sound. It has on it the symbol “<)))” when the sound is active and the symbol “<XX” when the sound is inactivated. There is no sound file for lesson 1, so this button does not have any action at present. On the contrary, lesson 2 comes with an audio file and you will be able to test this button and tune your system sound output for “Diaoulek” during the study of that lesson. The present version of “Diaoulek” is able to generate sound from text for French, English, Italian, Spanish or German languages but this possibility has been turned off for the Breton-French lessons to simplify the presentation. We will see later how to make it work.

A language must be studied in two different directions, from the language to be learned towards the language you know and from the language you know towards the language to be learned. In software “Diaoulek”, by convention, we call “Question” what is written in the language to be

learned and “Response” what is written in the language you know. The following button on figure 1 allows you to easily toggle from one direction of study to the other. On figure 1, this buttons bears the indication “Q->R”, so words in Breton (the language to be studied) are proposed to you to translate into French (the language you are supposed to know). By clicking on that button, it toggles and it will then bear the indication “R->Q” for an interrogation in French that you will have to translate into Breton. You should always balance the two directions of study.

The last button of the left window bears the indication “ Question-Response”. It is a dialog button and its use is not particularly simple. If you manage to understand how it works, then you will have understood almost everything of software “Diaoulek”. If you have difficulties, don't panic, this button is not used when you study a lesson in the “compact display mode” that we will see later. For now we study a lesson in the “normal display mode”, or if you prefer the “older display mode” where the words of the lesson are presented to you at random and one at a time.

So, we supposed we are in the “normal display mode” and we need to use the “Question-Response” button. When you are questioned, for example with a word in Breton, that word is written at the top of the left window and you need some time to think about it. This is a “waiting” state. When your thinking is finished, you click to look at the response, the translation into French but, with your click, the button passes from the “waiting” state towards the “registering” state. What you thought about the Breton word can, indeed, be true or false. You need to tell that to the software for it to know your possible difficulties with that word. Then it will be able to propose you that word more often. You tell your result to the software by a left click (the usual click) in case of a correct result and by a right click in case of an incorrect result. So a left click means “yes”, it is “good”, it is “OK” and a right click means “no”, it is “false” it is “KO”.

The above analysis show you that the button which is marked “Question-Response” must necessarily have two states , a “waiting” state (yellow state) and a “registering” state (red state). This button must also make a difference between the left and right clicks and even the middle click (for other actions, for example to go back and erase a former registering)

Here are precisely the actions of the main button according to its states:

State :	*Left Click*	*Middle click*	*Right click*
Yellow state	Continue	**Remove the recording of the previous word**	Continue
Red state	Register “good” and continue	Skip the recording of the present word and continue	Register “false” and continue

Remark 1 : The records “good” or “false” are provisional, they become definitive only when you leave the lesson and after a demand of confirmation.

Remark 2 :In the yellow state, the left and right clicks have the same effect, they make the software to continue. You can take advantage of that particularity by clicking two times with the left click if you think you know the words and that is true or by two right clicks if you think you do not know the word and effectively you don't know it. If you proceed that way, your reactions will become almost automatic and you will do much less click errors. Only for doubtful cases you will have to think about what is the good click to choose.

The first lesson with a "normal" display.

In the case of figure 1, we still are not ready to learn lesson 1. We have first to load that lesson by a left or right click on the "Question/Response" button. The difference between the clicks is unimportant here, in one case we write something in the right window and in the other case we write nothing. To differentiate the clicks would be useful only for the ten "complete" lessons, the "EE" lessons where you have like in a book some text with explanations and then vocabulary to learn. Here, we have only vocabulary and a right or left click have the same effect. Below, you can see what you obtain after a left click on the "Question/Response" button.

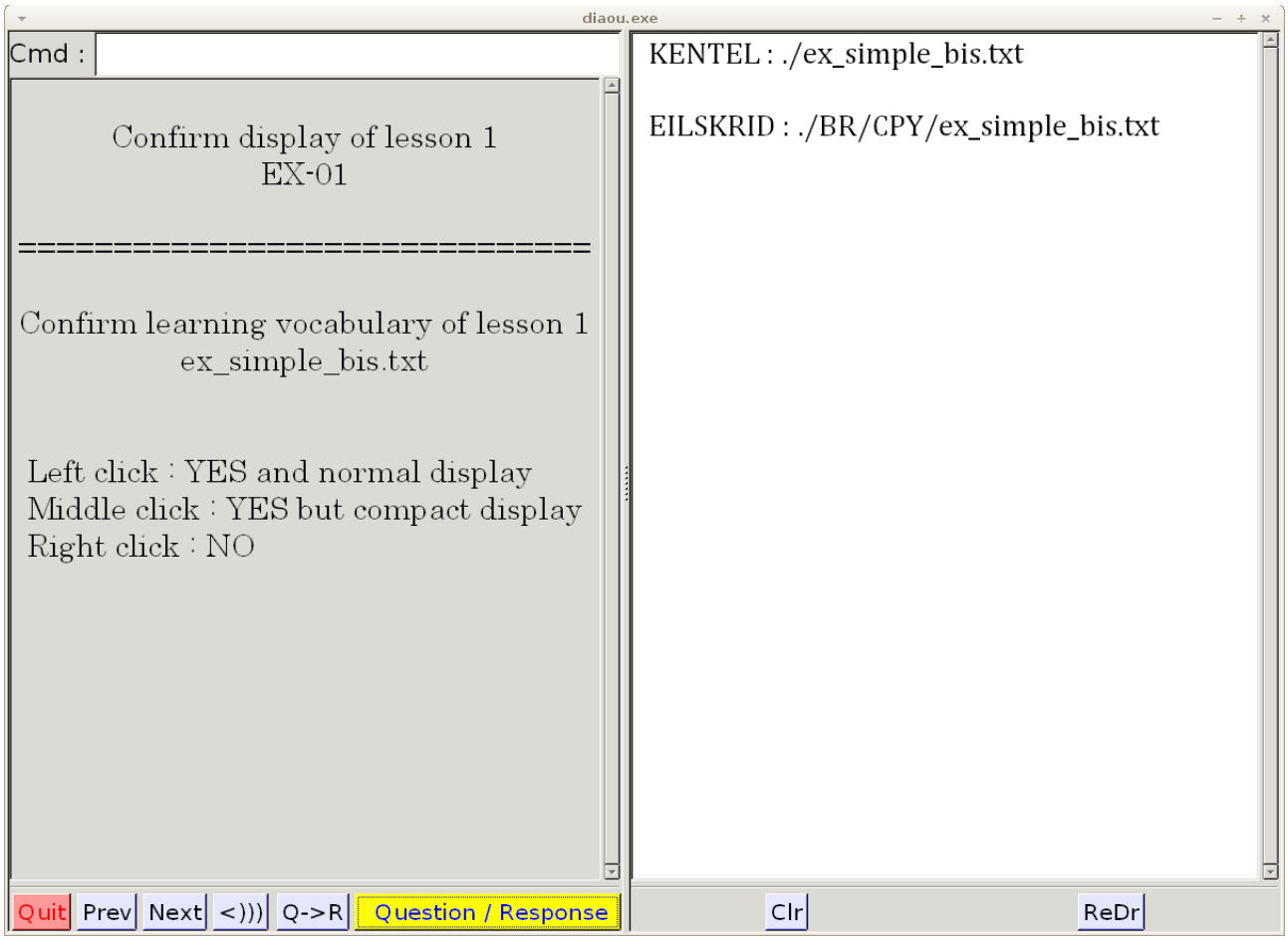


Figure 2 (QSen-2.png) Choosing the display mode.

In the "Question / Response" button, we will do a left click, the usual click, in order to have the kind of display which is qualified in software "Diaoulek" as "normal". The questions will be asked randomly one at a time. In a first pass, all the words of the lesson are used, then in the second run, the random order is strongly biased towards the words where you have difficulties. It is the origin of the name "Diaoulek" (diabolic) given to the software. In fact it is not that "diabolic" ! As for the display qualified here as "normal", it is in fact only the first kind of display that was coded. There is another kind of display now, the "compact" one, that will be seen later. In the "normal"display, the question is first written and the software waits for a click before starting to write the response. Then it waits again for another click telling it if you knew the word (left click) or not (right click). After the second click, the software passes automatically to the next question. One example of "normal" display is given in figure 3.

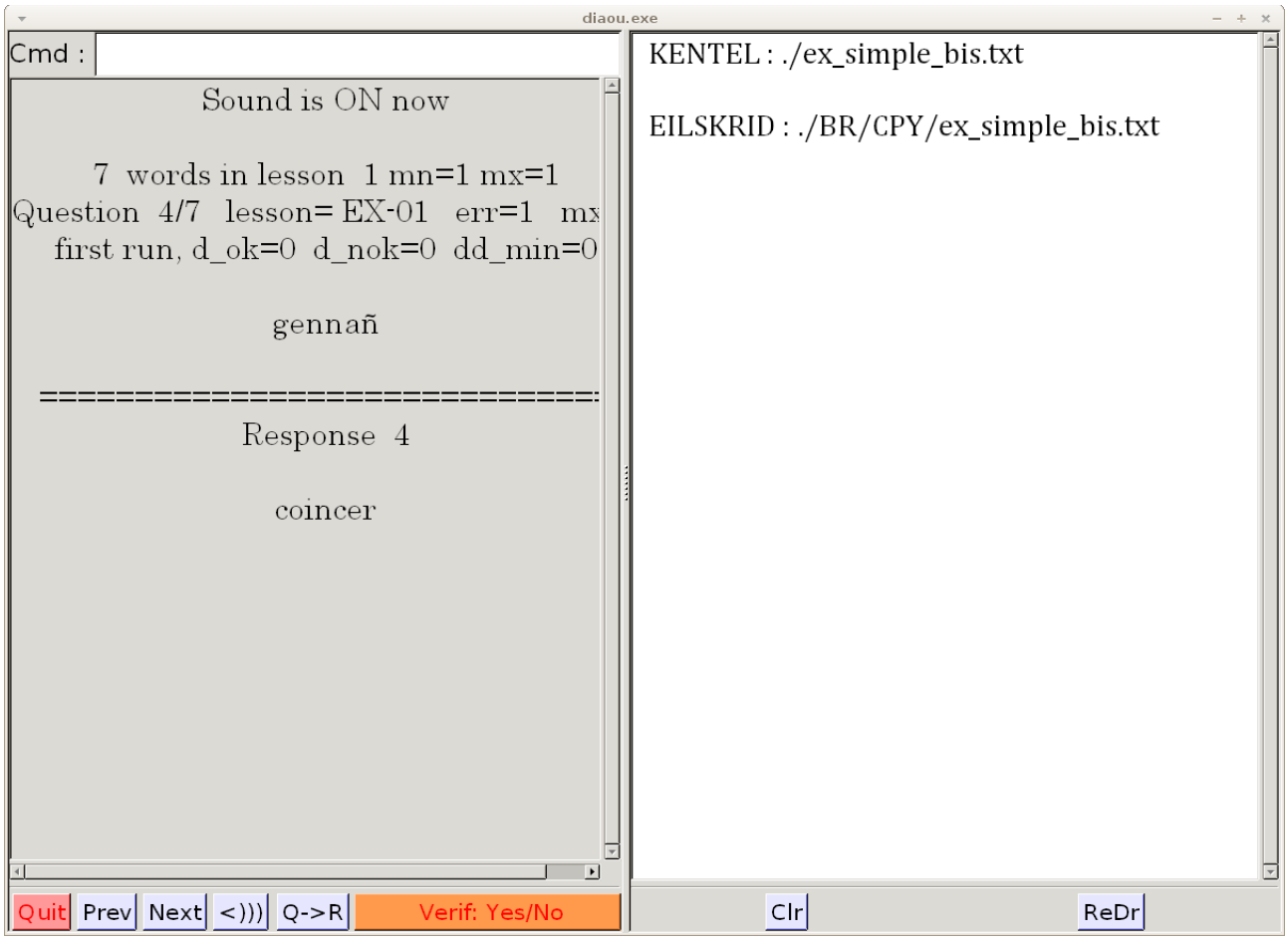


Figure 3 (QSen-3.png). Example of “normal” display.

Lesson 1 is offering to you difficult enough vocabulary, it is here only as an example of lesson simplified to the maximum and we use it to practice the use of the “Question/Response” button as was explained before. Let train yourself to the use of the left or right click according to the kind of response “I know” or “I don't know” that you wish to give to the software. Here, be sure that you are giving some negative responses (right clicks), that will be useful to us later.

You have given to the questions positive or negative responses but the records made by the software are only provisional, they will become definitive when you leave the lesson and after a demand of confirmation.

How to leave the lesson ? Simply by passing to the next lesson or by having a click on the “Quit” button. Here, we will go to the next lesson by a click on the “Next” button. This will open a dialog window that you can see on figure 4:

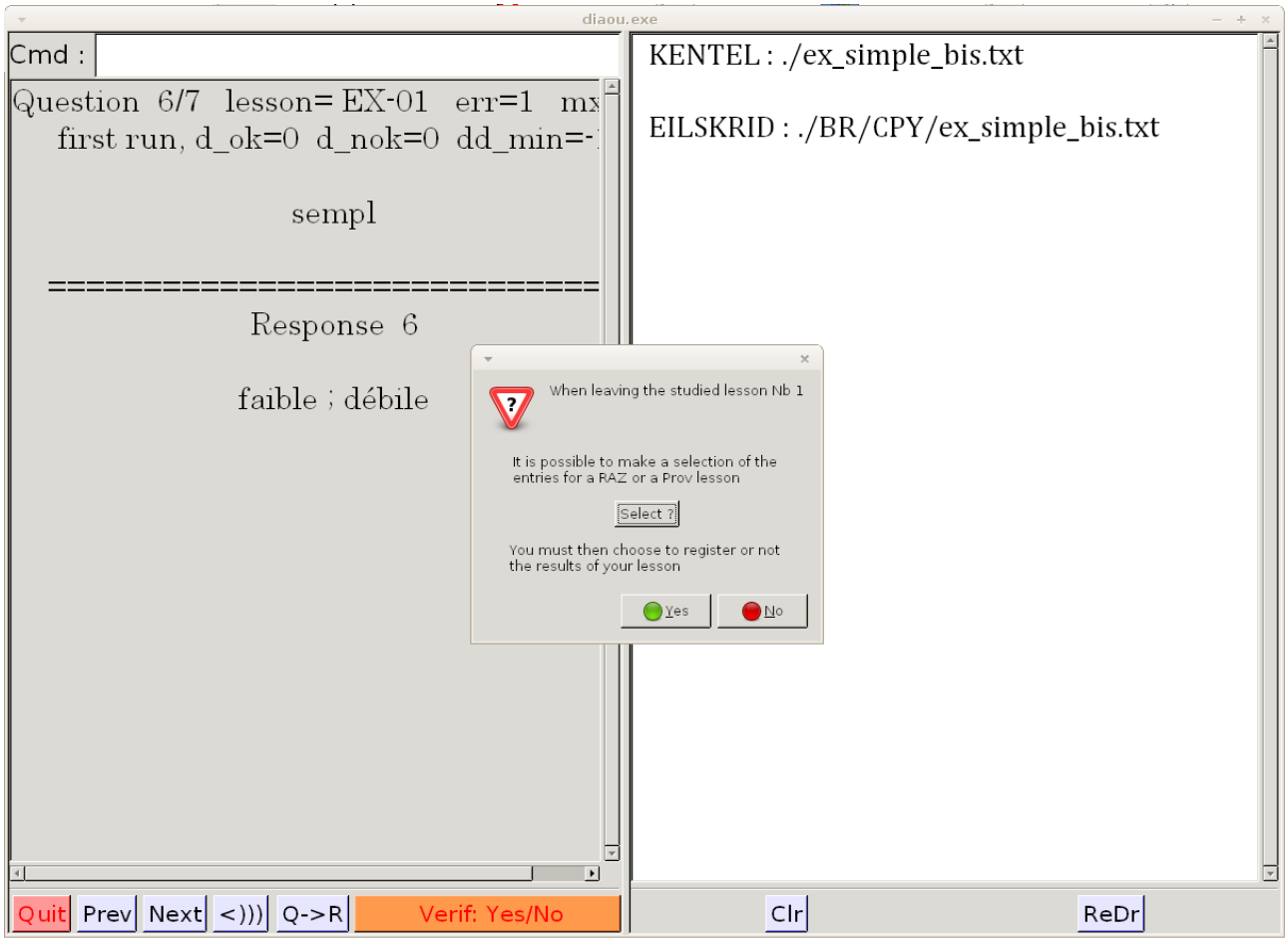
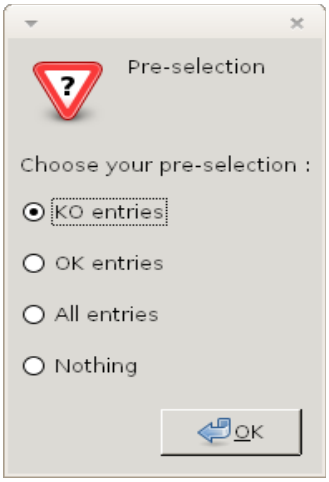


Figure 4 (QSen-4.png). When you leave a lesson, a dialog window opens.

The dialog window will offer to you the possibility to select words into your lesson for the creation of a “Prov” lesson, a kind of lesson we have already spoken of before. You can also register or not the lesson before leaving it. At present time, by a click on the “Select ?” button, we will choose to create a “Prov” lesson. In any kind, the software will send us back later to that dialog window for the registering of the lesson. By our click on the “Select ?” button, a new window is opening:



The default choice which is offered to you by that window is a pre-selection of the words where you had difficulties. Generally this choice is the most coherent one and we will accept it by clicking on the “OK” button.

Then, we obtain something like on figure 5 where the words which you declared as unknown are

already selected.

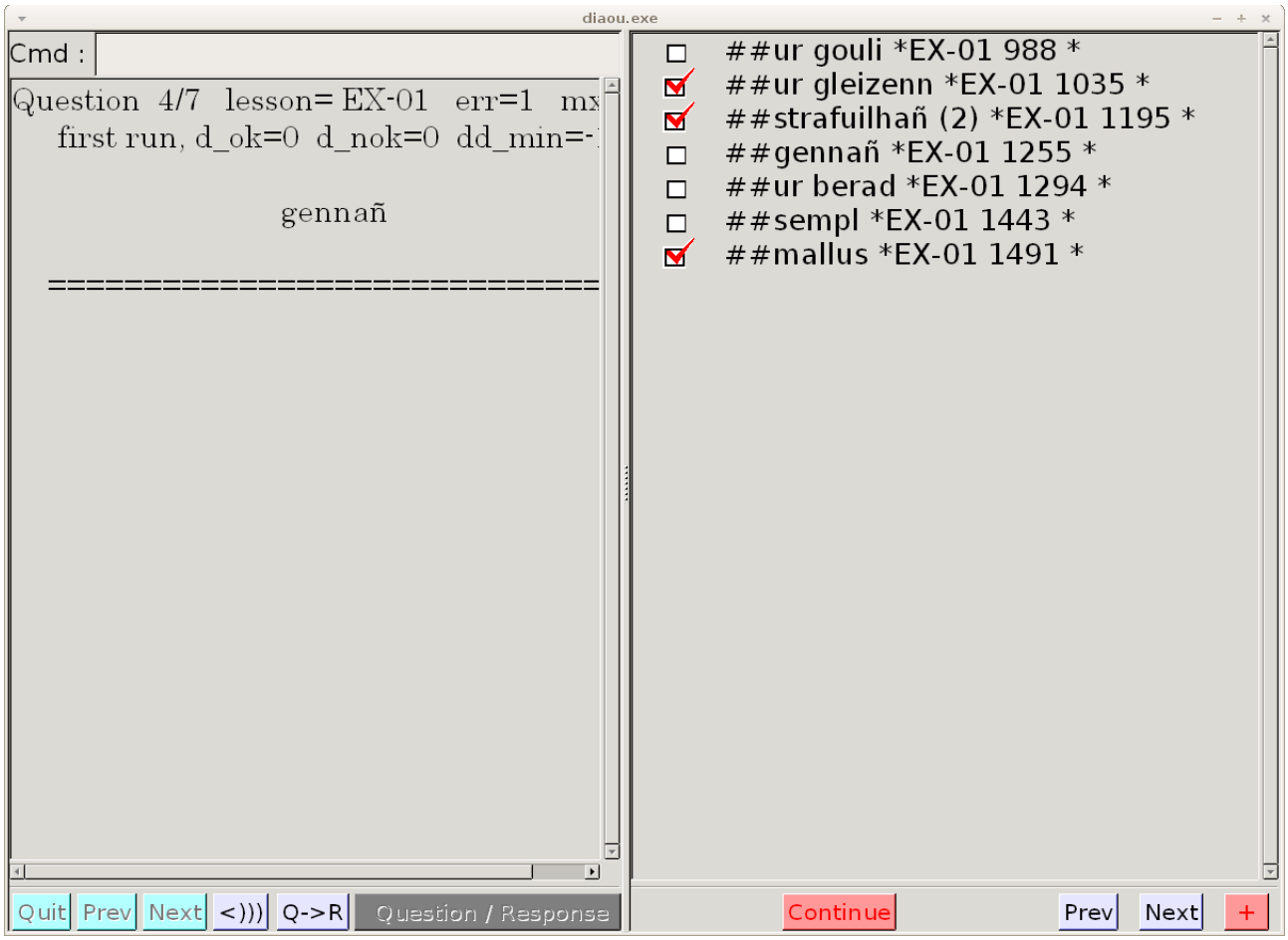
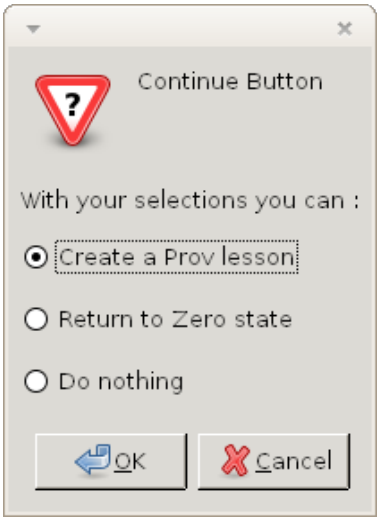
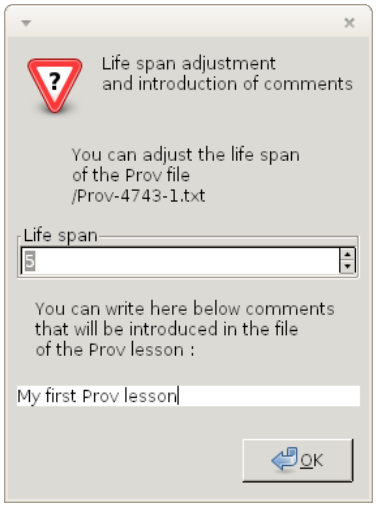


Figure 5 (QSen-6.png). Display of all the lesson “entries” with a selection of some ones among them.

You can add to the selection other entries or, on the contrary, remove some of them, for that you only have to click on the check-boxes. You can also verify that the entries are really the ones you intended to select by clicking the lines. That action will display on the left window the couple of question-response that was proposed to you when you were studying the lesson. Once you have finished your choice, you click on the “Continue” button. Then, a small windows will propose to you, by default, to create a “Prov” lesson with your selected words (in fact entries).



You have on the left a picture of that window where the making of a “Prov” lesson is activated by default. You will accept by clicking on the “OK” button and your first “Prov” lesson will be created almost automatically. Another window as shown below will open :



You have on the left a picture of the new window which allows you to personalize the “Prov” lesson. You will take note that the name of that lesson is given and that you cannot change it. The default life span is 5 days but you can change that. You can also introduce comments but this is not mandatory.

Clicking on “OK” will create the “Prov” lesson without asking you anything more and you will return to figure 4 where it will be proposed to you, anew, to select entries or to register (or not register) the lesson. Except for the very special case where you wish to do something else with other selected entries, this time you will click on the “Yes” or “No” buttons.

If we did reply at random to the software questions-responses, we will click on “No” and our responses will not be, finally, registered.

The second lesson with a “compact” display.

We are now back to the situation of figures 1 and 2 but, this time, the software proposes to us the following lesson, lesson number 2. One can change lesson at will by clicking on the “Prev” or “Next” buttons but here we will accept lesson 2. This is also an example of lesson, simpler for the vocabulary than lesson 1, but more complex for its file structure. Moreover, this lesson comes together with an audio file and we will use it to test sound. For Windows, the software comes with all the necessary “dll” libraries into the directory “Diaou-1-6” and so, the sound must work “out of the box” without any other installation, at least if the sound volume is not set to zero for your output devices. For Linux, at compilation time, you were obliged to load the “libsndfile” library but, after compilation, the problem is the same than the one with Windows, to choose the good output device and be sure that the output volume is not set to zero. In case of difficulty, check your sound settings with another software, an audio or video application for example. If your computer remains stubbornly mute, you may have more than one output audio device, try them successively one by one.

However, we don't have reached that point yet. We are in the case of figure 1, except that, this time, lesson 2 is proposed to us. We accept by making a left click on the “Question/Response” button. We come now to a situation like in figure 2. Be sure that the sound is activated, if necessary by clicking on the button with the logo “<XX”. You will also choose the direction of study as “Q->R” in order to be in the case of what will be presented later. The software is waiting for you to choose the display mode. Here, we will choose the “compact” mode by a middle click on the “Question-Response” button” and we will obtain something like on figure 6, except for the order of the questions because that order is random. So, each time, you have a different order.

On figure 6, we remark that all the buttons, except one, at the bottom of the left window have changed color. They are deactivated except for the sound button which remains active. It is not even possible to leave correctly the application because the “Quit” button is also inactive. That is also the case for the command line at the top of the left window. You only have to know that, to come back to a normal functioning mode of the software, it is enough to have a click on the “Continue” button at the bottom of right window. On that same right window, we have the display of all the “Questions” in the lesson, that is to say the words in Breton. These words are separated by lines whose beginning is yellow. The response is not displayed. In order to verify the “Response”, you have to click on one of these yellow lines. For example, on figure 6, the line with the label “ti” was clicked and in the left window the “Question” (ti ; an ti) and the “Response” (maison ; la maison = house, the house) were displayed. When you click on the yellow line, you should hear the sound if the sound button at the bottom of the left window is on “<)))”. You can hear again the sound by clicking on the sound file name “ aln-ex2.ogg” and you can do that as many times you want, even if your general sound button is into its off state : “<XX”.

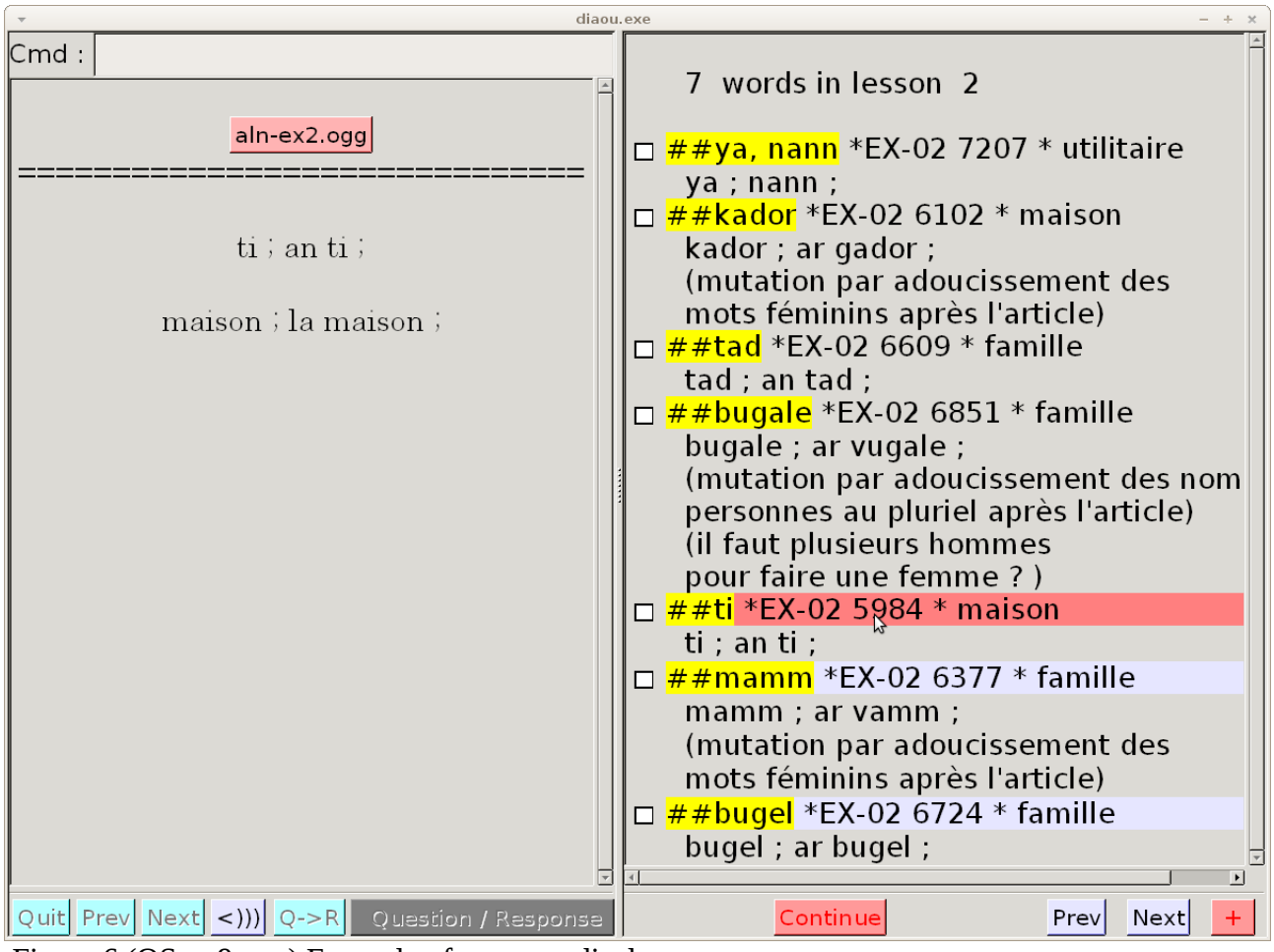


Figure 6 (QSen-9.png) Example of compact display.

On version 1.6 of the software, you can also hear the sound generated by the text to speech software “Svox-Pico” for the French responses. We will see later, when the English to French lessons will be introduced, how to remove or tune that sound.

On the right window, you have also check boxes and I suggest to you to check the words that you don't know. The checked boxes will be used to create a “Prov” lesson.

When you have a compact display, the lesson is cut into pages and you can navigate among the pages with the buttons “Prev” and “Next” at the bottom of the right window. In lesson EX2, we have only 7 words which are displayed on a single page. The buttons .“Prev” and “Next” are thus without any action. At the bottom of the right window, we have also a button with the logo “+”. That button is there to complement the button “Continue” without leaving the compact display mode and without the recording of the lesson results. Figure 7 shows us what we get by a click on the “+” button. The first choice, activated by default, is particularly interesting. It allows you to regroup all the checked entries, most often the words which you did not knew, at the top of the lesson. For lesson EX2, that is not very useful because we have only seven words in the lesson which is then displayed on a single page. In a true lesson, with perhaps a few tens of entries, the regrouping may spare you a lot of time. Moreover the order of the entries is changed and randomized. That can be interesting if you want to separate two related words or two false friends.

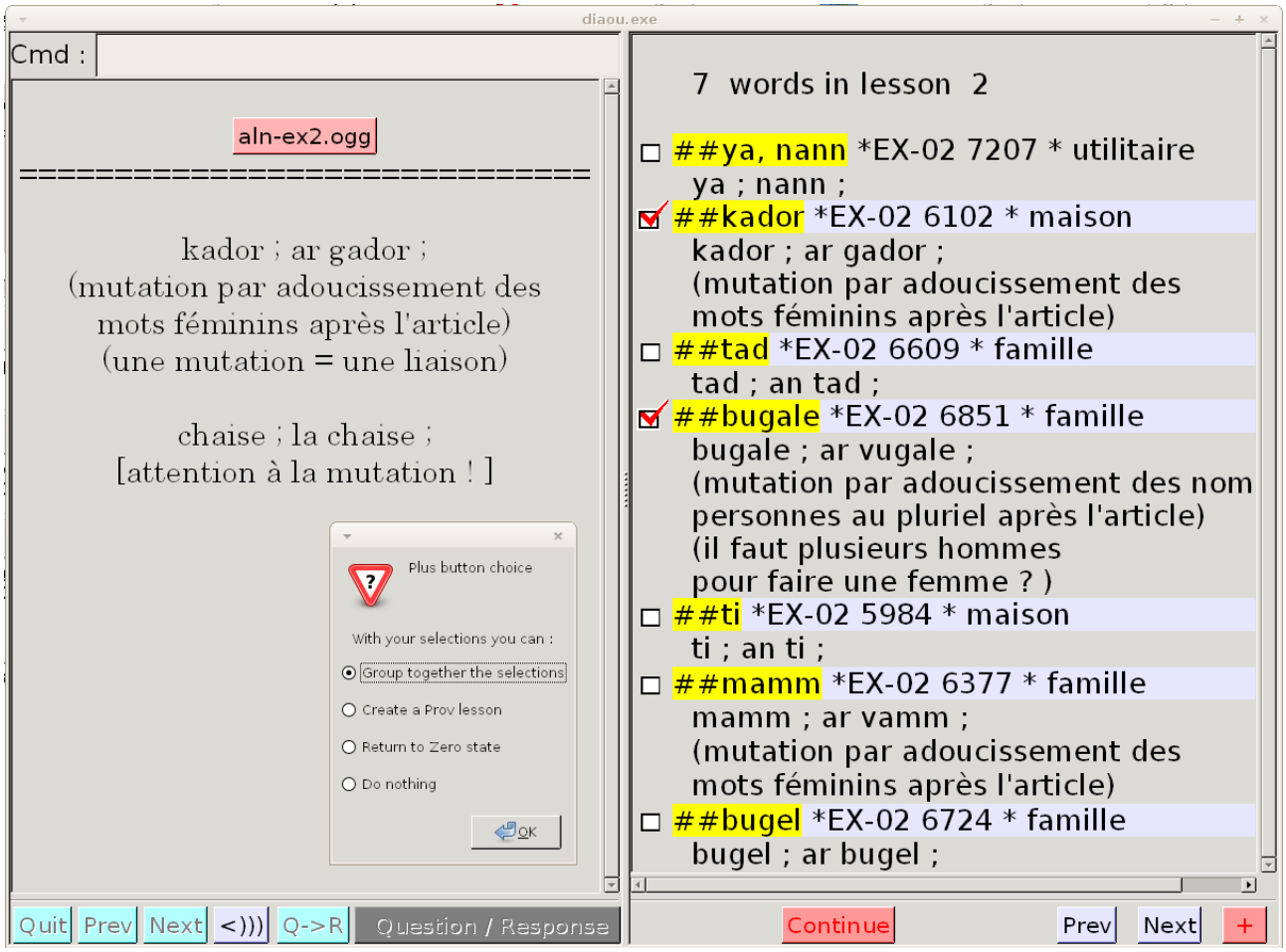
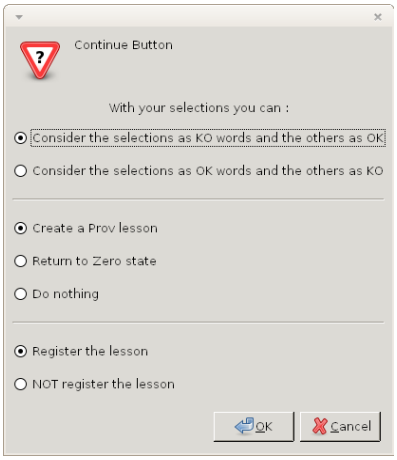


Figure 7 (QSen-10.png). Compact display and the various possibilities offered by the “+” button.



When you have finished to study your lesson with the compact display mode, you click on the “Continue” button and it will display a new window which you can see at left. That floating window is divided in three parts with a group of choices into each part and you have to select a particular choice in each group. In the top part, you have to tell if the selected entries where unknown (“KO” words) or, on the contrary known (“OK” words). In the central part, you can create a “Prov” lesson or not. At last, in the bottom part, you are asked if the lesson has to be recorded or not.

In fact, the default choices are those which you will use most often and so, generally, you will click on the “OK” button without any other action. The software will then ask to you the life span of the “Prov” lesson and the comments if you have some to add to the lesson and after that everything will proceed automatically. Then, you will be back to the normal display mode but, following a “compact” display of a lesson, it will be proposed to you to study the same lesson in the other direction (QR or RQ) because that was not possible in the compact display mode.

Remark : When you are in a “normal” display mode, you can change to a “compact” display mode by the order “!cpct” but the reverse, going from a “compact” display to a “normal” display is not possible.

Management of the “Prov” lessons.

As we have seen above, after the study of a lesson, you were strongly encouraged to create a “Prov” (Provisional) lesson. These “Prov” lessons will probably become your main tool to study a language. Recent studies seem to confirm the fact that to retain something in memory, it must be recalled frequently first and then after longer and longer time periods. It is also better when there is not obvious regularity in the intervals. The “Prov” lessons will provide such an optimal learning if you use them regularly, that is to say, each day. These lessons disappear after 5 days. In fact, they simply change their name in “old-date-former-name”. They will be back 3 times 2 days apart, then 2 times after 4 days, again 2 times 8 days apart, then once after 16 days and finally once after 32 days. So they completely disappear only after more than 2 months. You will recopy the words which you don't know well enough every day in another “Prov” lesson up to complete memorization. To predict when words are recalled will rapidly become impossible because they will be part of many lessons, each one following independently its own cycle of oblivion. The numbers of recalls given above are only the default ones, you can change these numbers in the configuration file, to adapt them to your ability to memorize.

What we will see now is how to list and select your “Prov” lessons in order to study them anew. When you are back to the normal display mode, you only have to write the order “!shprov” (**sh**ow **Prov**) in the command line at the top of the left window. You will obtain something like in figure 8 :

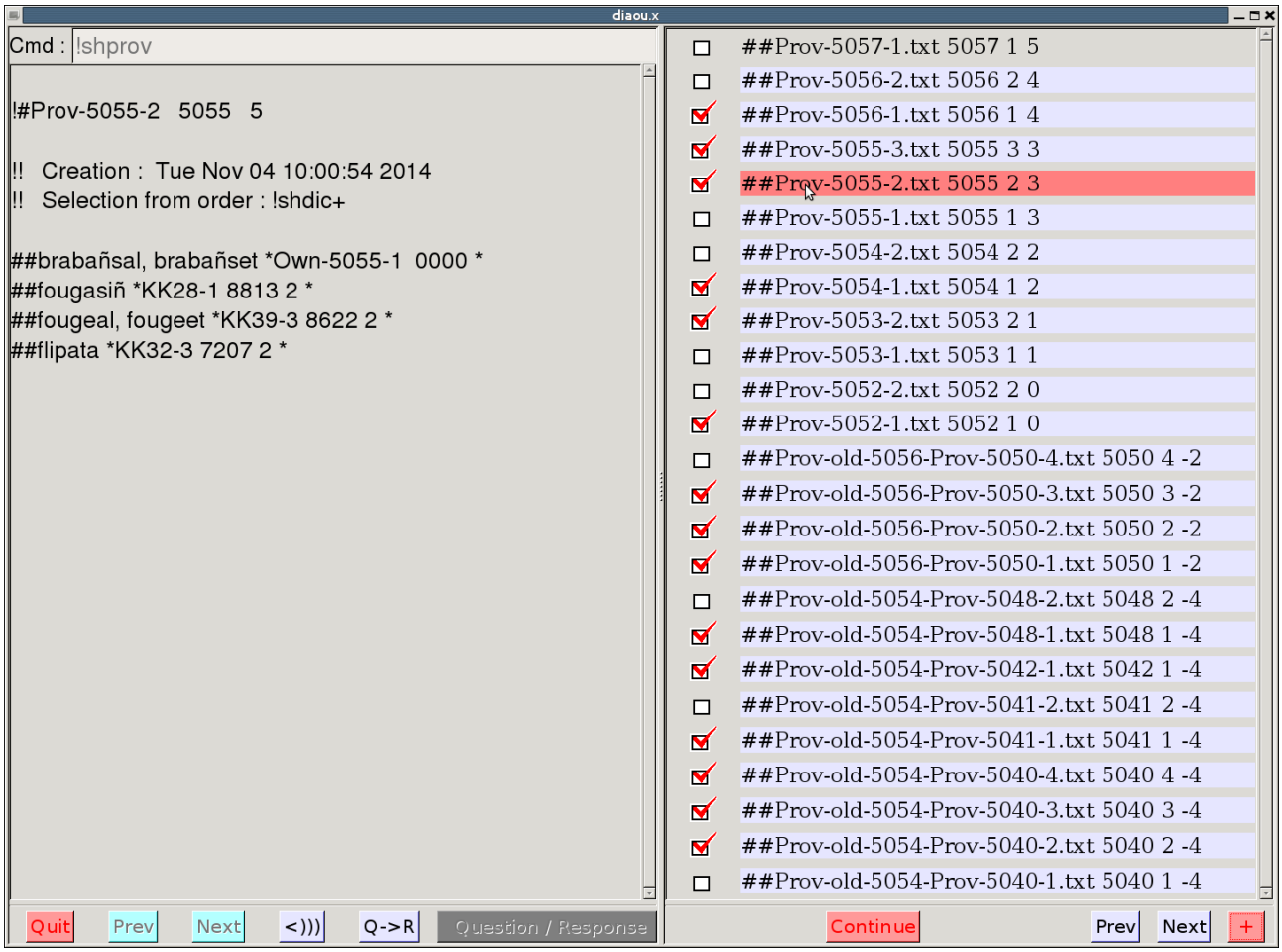


Figure 8 (QS-12-1.png). Management of the “Prov” lessons.

What we have on the right window is a paginated listing of all your “Prov” lessons. For you, at present time, you have created only one or two “Prov” lessons yet. So, you will obtain something similar to what is on figure 8 but with less lessons. However, the principle remains the same. In the right window you have check boxes, they are followed by the name of a “Prov” lesson and after you have 3 numbers. The last figure is the number of days which that particular lesson has yet to “live”. In fact, as it has been said earlier, the “Prov” lessons do not disappear immediately but their names are changed and they remain available for at least 5 more days and even 2 months if you have not change the default values in the configuration file. The lessons in their survival period of time are listed after the active “Prov” lessons and you can reach them by clicking on the “Next” button at the back of the right window. The recalled lessons have a provisional name beginning by “Prov-old” and their life span is negative.

If you click on a “Prov” lesson name, an abstract of its contains will be displayed in the left window. You can see there the comments that the software has automatically generated when it has created that lesson, that is to say, the lesson name, the date of creation and a few other indications on the origin of the lesson. If you have inserted comments when the lesson was created, they will also be displayed. These indications are followed by the list of all the lesson entries.

As you can see on figure 8, it is possible to select “Prov” lessons, then by pressing the “Continue” button you will be able to add them up for study. It would even be good to study each day all the “Prov” lessons in both directions QR and RQ. If you have too many “Prov” lessons, the button labeled “+” at the back of the rightmost window will allow you to select about half of them according to various criteria.

Remark : The management of the “Own” lessons is very much alike to the management of the “Prov” lessons. You only have to write “!shown” (**sh**ow **own**) in the command line.

Study of several languages with software “Diaoulek”.

Software “Diaoulek” allows you to study several languages. For that purpose, you only have to give a configuration file for each language. The configuration file for the language which you study most often must be called “diaou.conf” because the software starts (by default) from a configuration file of that name. For the other languages, the configuration files can have any name you want but with the extension “.conf”. The “Windows” installer will set-up the software “Diaoulek” with the Breton as main language to be learned and the English as another language. So the configuration file for Breton is “diaou.conf” and the configuration file for English is “diaou_en.conf”. If you want to study other languages, you will introduce other configuration files extrapolated from “diaou_en.conf”. In the file “diaou_en.conf” the language set to communicate with the user is English. This is not quite logical but that was used as a test to ascertain that the communication with the user could be done in English as well as in French. If you want the dialogue of the software with yourself to be done in French, you only have to change the line:

Lang :> EN2 <:

into:

Lang :> FR <:

In order to pass from the study of the Breton to the study of the English language, you will write the order “!chconf diaou_en.conf” (chconf = **ch**ange **conf**iguration), in the command line at the top of the left window. The “Diaoulek” version which you have installed comes with 12 English-French lessons, the vocabulary of them is taken from articles in “Scientific American”. They are not lessons for beginners but they can be used as examples for you to write your own lessons. Of course, you can display and study these lessons as you were doing for the Breton lessons.

The “Svox-Pico” text-to-speech software.

The English lessons come without any audio files but the “Svox-Pico” text-to-speech software has been integrated into “Diaoulek”. “Svox-Pico” is a technology bought by “Google”, not free but usable off-line without any fee. Only the main part, the “engine” is delivered under a binary form. The other parts are in C. This software is currently the best text-to-speech software available that can be integrated into a standalone code. The sound it delivers is not perfect but generally quite good. “Svox-Pico” can read texts written in English, French, Spanish, Italian and German. We have only a female voice but we can adjust somewhat the sound pitch, speed and volume. It is what we will see now.

It is sufficient to write the order “!svox” in the command line at the top of the left window and that will open a graphical wizard like on figure 9. This wizard is organized into 3 tabs and what you see first is the “General” tab which gives you some indications on what can do for you this implementation of “Svox-Pico” in the “Diaoulek” software. You need to tell what you want for the “Questions”, that is to say the language you are learning, here English, and what you want for the “Responses” in the language you know, here French. This is the reason why you have two other tabs which are labeled as “Q svox Q” and “R svox”

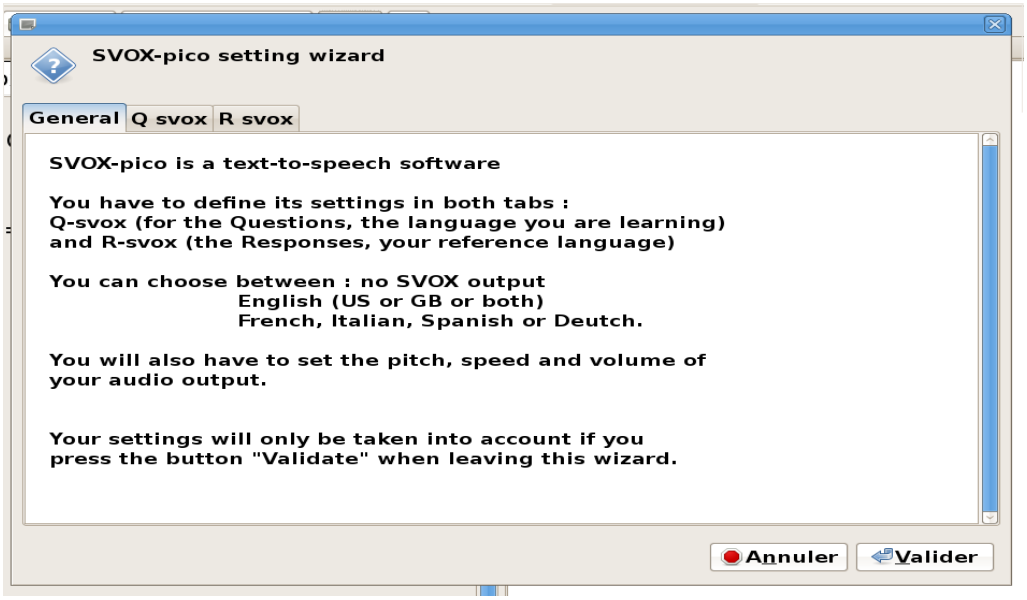


Figure 9 (Svox1_en.png). The “general” tab of the Svox wizard.

Let us open the “Q svox” tab :

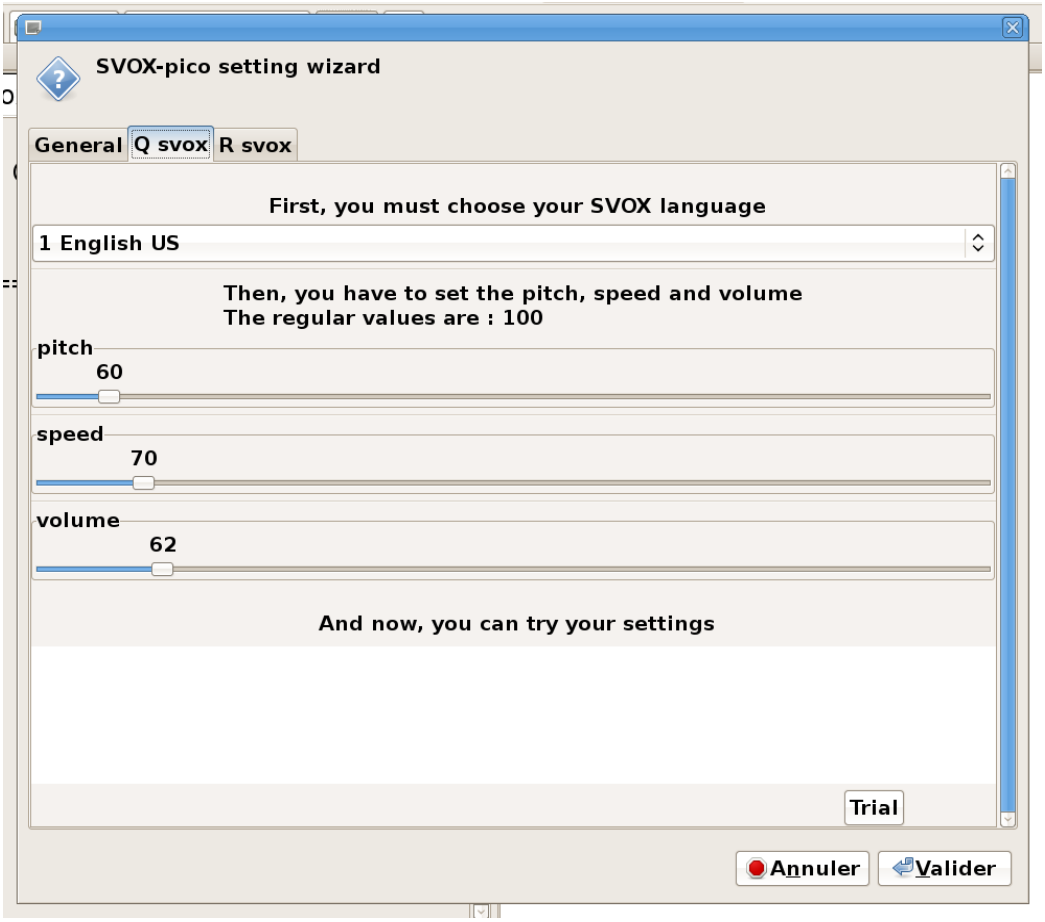


Figure 10 (Svox2_en.png). The “Q svox” tab of the Svox wizard.

On figure 10, you have first a “combo box”, that kind of line which let you choose different items. Here we have selected item 1 : “English US”. You can choose between 8 different items :

- item 0 : No svox output
- item 1 : English US
- item 2 : English GB
- item 3 : English US + GB (your sentences are read first with an American accent and then with a British accent)
- item 4 : French
- item 5 : Spanish
- item 6 : Italian
- item 7 : German

Obviously, because we are learning English, we must choose item 1, 2 or 3. In fact, there is not much difference in “Svox pico” between the American and British accents and so choices 1 or 2 are best. For the “Responses” in French, we must select in the tab “R svox” item 0 (no output) or item 4. Once we have selected the language, we must select the pitch, speed and volume of the voice. The values “100” for each of the 3 parameters are the regular ones. You have only a female voice but you can make it speak like a little girl or be deep enough. The speed parameter is very important. For a language that you are learning, you don't want “Svox” to speak too fast. The volume of the sound output depends from your hardware and of your settings. The best choice for the 3 parameters will be obtain by trial and errors. On figure 10, under the sentence “ And now, you can try your settings”, you have a white text zone which can be edited but we will leave it empty. Under the text zone we have a button labeled by the word “Trial”. We will click on that button and few sentences extracted from “Wikipedia” will appear on the text zone and will be read by the “text to speech” software. These sentences are for the different languages a very short presentation of the capital cities of these countries. You may found these texts to be too long for your purposes but, because the text zone is editable, you can remove or modify the sentences. In fact, this feature is very important because “Svox Pico” is far from perfect, specially in French. However “Diaoulek” offers you the possibility to replace in the lessons words by some hopefully better phonetic equivalents. For that, we will introduce a notation like the following one :

word1 word2 <(word3 word4) word5 word6 word7.

On your screen, in a lesson, you will see : word1 word2 word5 word6 word7.

But what will be transmitted to “Svox Pico” will be : word1 wor2 word3 word4 word7.

That is to say that we will not write on the screen what we have between “<(“ and the following parenthesis “)”, but the number of words will be counted and they will replace for “Svox Pico” the same number of words following the closing parenthesis. There is a little problem if we want to have a greater or lesser number of words to be replaced. In that case the underscore “_” will do the trick because it will be considered as a regular character when counting the words and it will be replaced by a blanc space when transmitted to “Svox Pico”. With our above example :

word1 word2 <(word3_word4) word5 word6 word7

will be read on the screen : word1 word2 word5 word6 word7 (as above)

But we will transmit now to “Svox Pico” : word1 word2 word3 word4 word6 word7.

For a lesson, we usually need quite a few trials before we obtain a satisfying replacement. It would be very tedious to recompile each time the lesson. The use of the editable text zone in the “svox” setting wizard will ease that problem because we can rapidly make many trials. For example, in the English text extracted from “Wikipedia” that we use, if we want to replace for “Svox” the word

“capital” by “main city”, we will edit the text and write : … <(main_city) capital.... In a lesson you would have read on your screen only the word “capital” but “svox” would have pronounced it as “main city” as we can test it here by a click on the “Trial” button.

The dictionaries computed with the words of the data-base.

As we have a dozen of lessons, each with about twenty words inside, there is already some vocabulary, enough to make small English/French and French/English dictionaries. It is what we will see now.

In fact, you have nothing special to do, the dictionaries are automatically created or updated. As soon as you add a lesson or modify one which already exists, the dictionaries are updated. We only have to see how to use them. To make a call to the “QR” dictionary, that is to say the dictionary of the language to be learned towards the reference language, you only have to write “!shdic” (**sh**ow **dic**tionary) in the command line at the top of the left window. The first page with the words beginning with “a” (here we have only 4 words) will then be displayed. The dictionary has only 26 pages, this is not much but it is already a lot if you have to turn the pages one by one by means of the buttons “Prev” and “Next” at the bottom of the right window (see figure 11). It is why, there is also at the bottom of the right window a small command line where you can write the first characters of the word you are looking for. For example, in the case of figure 11, we were looking for a word beginning by “bri”. So, we have written “bri” in the command line and made a “return”. The page with the words beginning by “bri” has been displayed and ahead of these words we have a yellow mark to put them into evidence. If you click on one of the lines of the dictionary, you can have the translation into French. In the case of figure 11, we have clicked on the word “bright” and the translation has been displayed in the left window. In fact, what is displayed is the couple Question-Response of the lesson whose alias is “SA1”. It is into lesson sa1.txt that we have the word “bright”.

It is possible to select words in the dictionary by checking the boxes at the beginning of the lines. On figure 11, three of these boxes were checked and, obviously you can have other boxes checked on other pages of the dictionary. When we have finished to use the dictionary, we make a click on the “Continue” button at the bottom of the right window and then, you will be proposed to create a “Prov” or an “Own” lesson with the selected words.

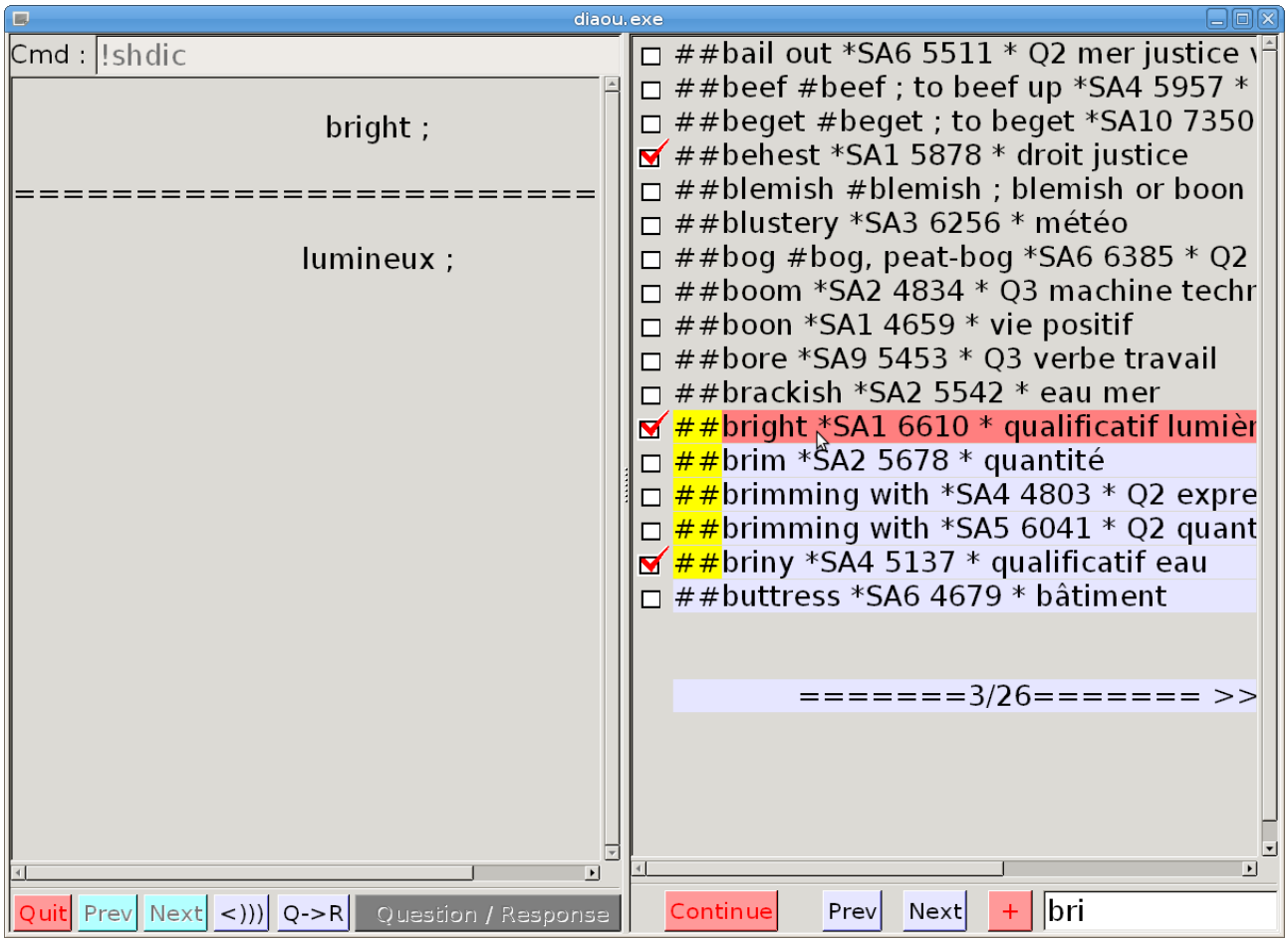


Figure 11 (QS-13.png). Searching a word in the English-French dictionary.

On figure 11, the QR dictionary has been displayed, but it is also possible to display the RQ dictionary (here the French-English dictionary). For that, you only have to write the order “!shcid” (“cid” is simply “dic” written in reverse order) in the command line at the top of the left window. The list of all the possible commands can be obtained by writing “help” or “!help” on that same command line.

Dictionary of the words with a particular tag.

When you compose a lesson, you can attach one or several tags to each of the lesson entries. This has been done for the English-French lessons as well as for the Breton-French lessons. The list of all the tags which were really used can be displayed if you write the order “!ltag” (**l**ist of **tag**s) in the command line. In the case of English lessons, the word “eau” (water) has been used as a tag. We can compute a dictionary with all the words having the tag “eau”, for that you will write in the command line at the top of the left window the order:

!shtag eau

What we obtain is shown on figure 12 below. We can view the words with their translations by a click on the lines in the right window and we can select some of them with the check boxes. These words will be used to create “Prov” or “Own” lessons when, by a click on the “Continue” button, we leave the dictionary.

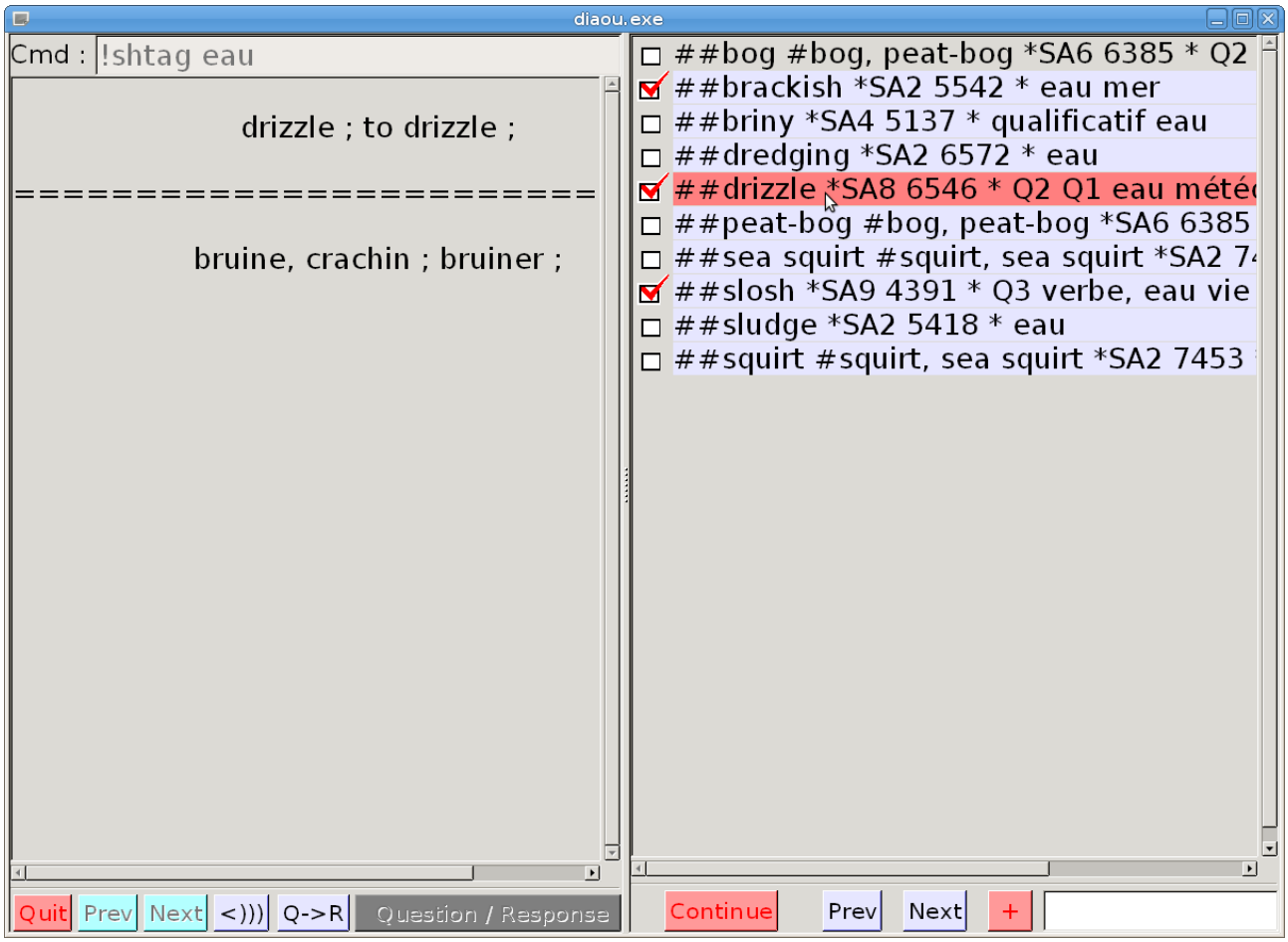


Figure 12 (QS-14.png). Display of the words with the tag “eau”.

Remark : The order “!shtag” (**sh**ow **tag**) allows you to generate a QR dictionary but it is also possible to generate an inverse dictionary, that is to say an RQ dictionary from the reference language towards the language to be learned. To get that, you only have to write the order “!shgat” (“gat” is “tag” written in reverse order) which must be followed by the particular tag name you are looking for.

Use of other dictionaries in software “Diaoulek”.

As we have seen above, we are able to create dictionaries with the words in the lessons. However, if we have only a few lessons or no lesson at all, what is to be done ?

In fact we will try to use bilingual dictionaries if we can find them on the web. This seems however to become harder and harder with time. You can easily find “online” dictionaries but not down-loadable ones. A few years ago, there was the “Freelang”dictionaries with the extension “.wb”. They are not available today. They have been replaced by encrypted versions. However, if you have on your computer some of these older files, you can use them in “Diaoulek”. The only collection of bilingual dictionaries which are delivered under a GPL license is the “Freedict” collection. They are small, at most 9000 entries dictionaries. They are delivered under different formats but “Diaoulek” can only use those with the extension “.tei”. They are written in a kind of “XML” language. For the convenience of the user, the “Diaoulek” project will distribute the French/English, English/French, French/Deutsch, Deutsch/French and French/Breton dictionaries. A special version of the Tomaz Jacquet Breton/French dictionary, specially developed for “Diaoulek” is also available.

The "Freelang" dictionaries.

The "Freelang" dictionaries were a collection of about 200 dictionaries which you could download without any fee and among them Breton/French and English/French dictionaries. Since version 1.5 of software Diaoulek, you could have used the "Freelang" dictionaries to generate lessons, or at least those of west European languages and among them all the regional languages of France. These dictionaries were ".wb" files, formated but otherwise ordinary text files. These dictionaries have recently disappeared and have been replaced by other ".flg" files, probably an encrypted or at least not readily readable file format. So, you will not be able to use the "Freelang dictionaries" except if you have an older version on your computer. If this is the case, you can install it easily with the order "!mngdic" (**m**a**n**a**g**e **dic**tionaries) or copying it in the "FOUND" directory of the appropriate language. The installation wizard will ask you if it is a "QR" or a "RQ" dictionary and it will perform the installation.

The "Freedict" dictionaries.

As said above, you can use the dictionaries with the extension ".tei". These dictionaries are included into source archives which are more and more difficult to obtain. They can however be downloaded for example at :

https://en.osdn.jp/projects/sfnet_freedict/releases/

These files can be found in archives whose names include the sequence ".src." for example :

freedict-fra-eng-0.3.5.src.tar.bz2 or freedict-fra-eng-0.3.5.src.zip

The "Diaoulek" project will also distribute the ".tei" dictionaries whose one of the languages is French. However they may not be in their most recent version. For the English/French and French/English dictionaries, you will have them directly by the order "!update". When you are studying Breton, the order "!update" will also download the "French/Breton" ".tei" dictionary. The "Breton/French" ".tei" dictionary will not be distributed by the "Diaoulek" project because it has not been tested yet by lack of time. It is replaced by the special version of the Tomaz Jacquet Breton/French dictionary whose anyway origin is the same.

Use of the dictionaries.

You can use the external dictionaries that you have downloaded and installed along with the dictionaries computed with the words of your lessons with the order "!shdic+" and select words to generate "Prov" and "Own" lesson. There is no need for a reversed order like "!shcid+" because the order "!shdic+" will display the two lists of words in two different pages and you will toggle from one list to the other with tabs labeled "Dic QR" and "Dic RQ". On figure 13 we have written the order "!shdic+" in the command line at the top of the left window.

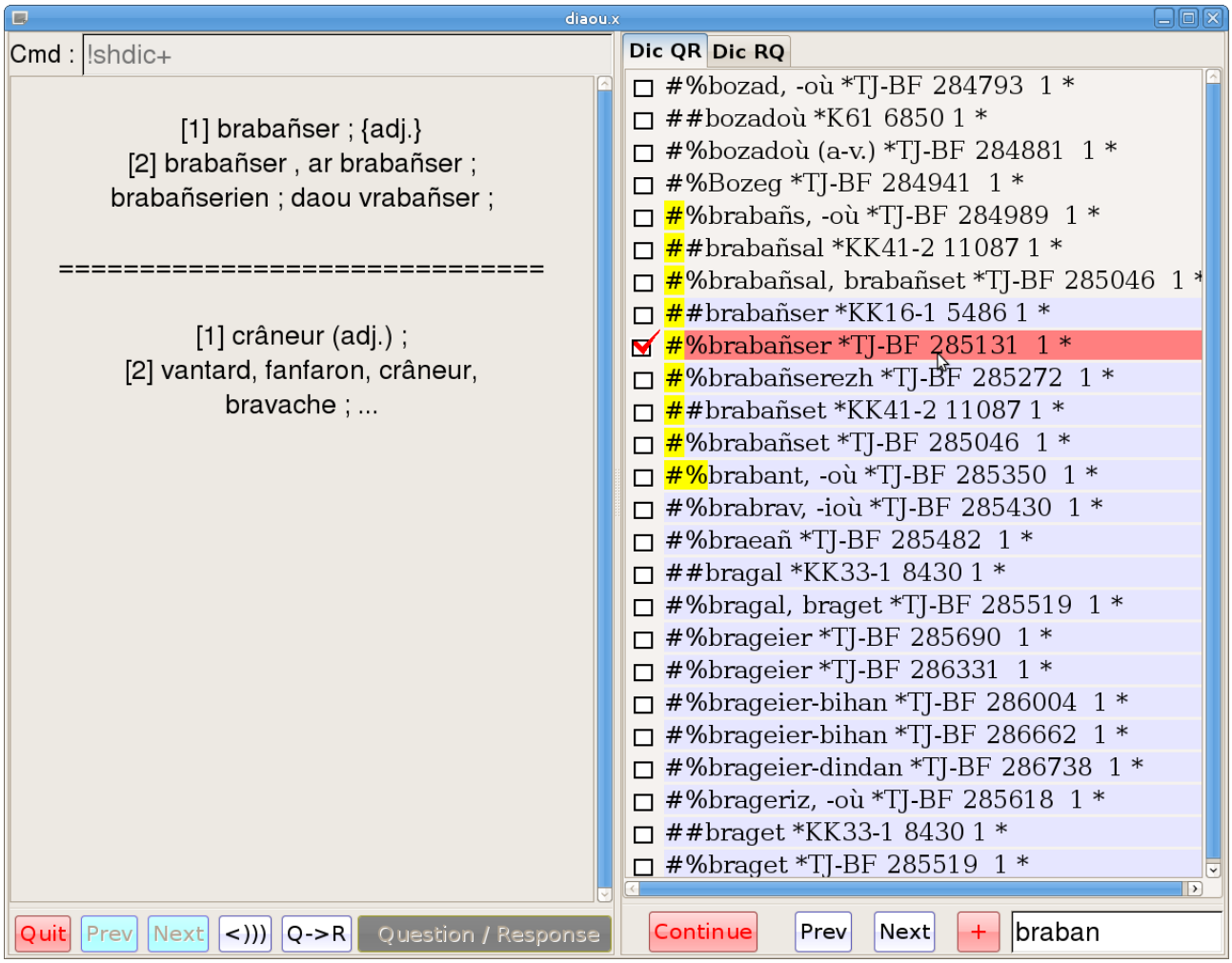


Figure 13 (QS-15.png) The order “!shdic+” and the selection of a word in the “Tomaz Jacquet” Breton-French dictionary.

The “Dic QR” tab is selected and “braban” has been written on the line located at the bottom of the right window. All the entries beginning by “braban” (with or without the accent) are indicated by a yellow mark. Here the verb “brabañsal” in the Tomaz Jacquet dictionary is selected. You can see on the left window what will be automatically generated in a lesson “Own” if you choose that option when you have finished your selections. This option is offered to you when you leave the “!shdic+” dictionary by pressing on the “Continue” button. On figure 13 the words in the lessons are marked with a sign “##” and the words in the external dictionaries, here the Tomaz Jacquet dictionary, are marked with the sign “#%”. The alias of the dictionary or of the lesson is also indicated as well as other informations for the software.

Obviously if you press the “Dic RQ” tab you will get the French-Breton dictionary as in figure 14.

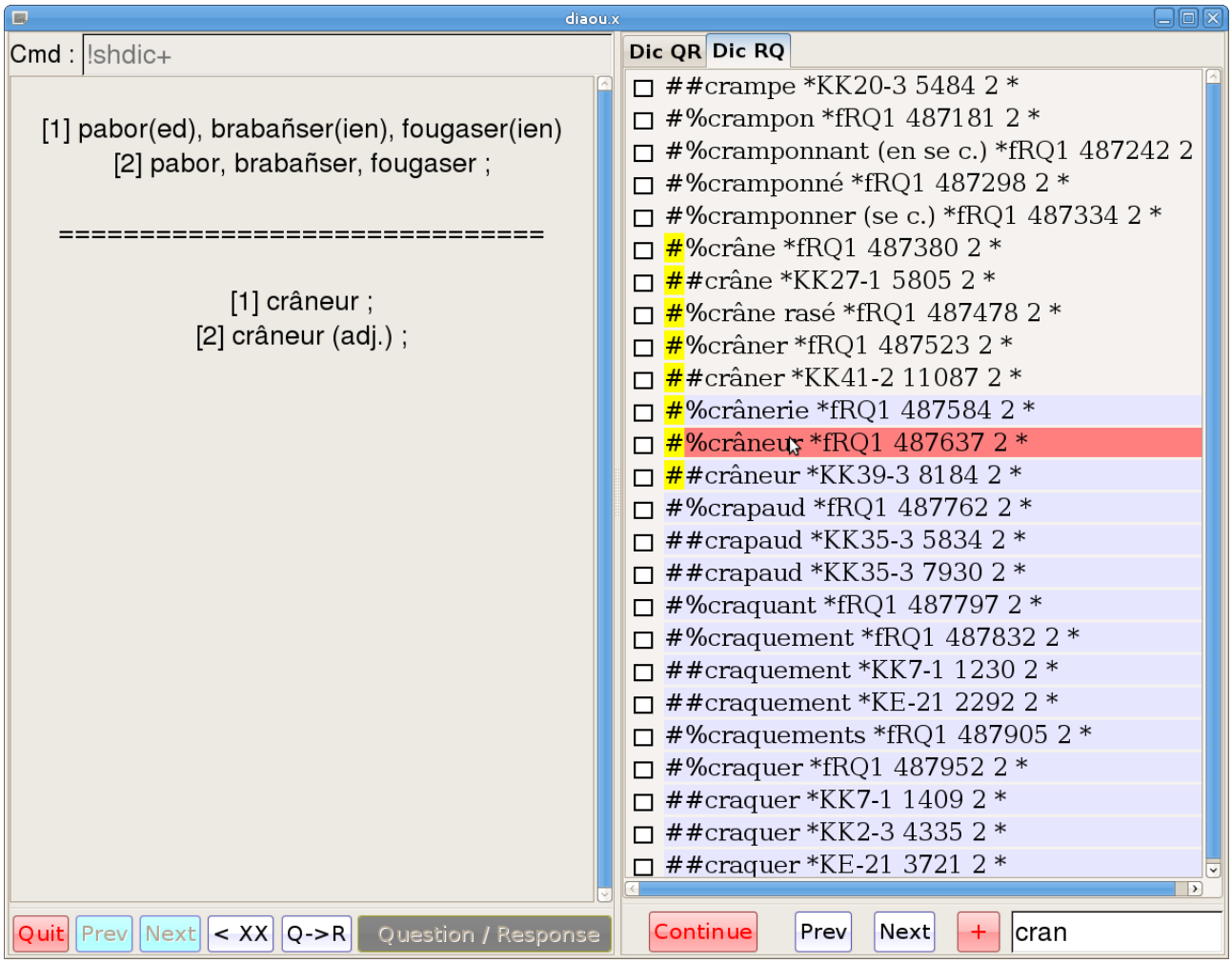


Figure 14 (QS-16.png) The order “!shdic+” and the selection of a word in the “Tomaz Jacquet” French-Breton dictionary.

As you can see on figure 14, you have words in the lessons as well as on the Tomaz Jacquet French-Breton dictionary which was obtained from a “.tei” file downloaded from the “Freedict” site. As indicated above, this dictionary is now distributed by the “Diaoulek” project and you will obtain it automatically with the order “!update”. That will be seen later.

The English/French and French/English dictionaries.

Small (about 8000 entries) English/French and French/English dictionaries exist in the “Freedict” project. They cannot withstand comparison with the 50000 words contained in those from “Freelang”. The “Freedict” dictionaries in the “.tei” format can be obtained by the order “!update” and they will be installed almost automatically. You will just have to specify if they are QR or RQ dictionaries. Here, for us, QR means English to French and RQ means French to English. The “Freendict” dictionaries can be used along with the “Freelang” ones if you still have old copies of them in the “.wb” format on your computer. The command “!mngdic” gives you the possibility to install or uninstall any dictionary.

Setting up and updating of the data-bases.

The software which you have installed is fully functional and we have made a rapid presentation of

its main features. However this software must be completed by “data”. We have 2 kinds of “data”, the lessons with possibly their associated audio files and the results of your studies.

Recovery of data from an earlier version of software “Diaoulek”.

If you begin with software “Diaoulek”, obviously you have no results coming from earlier studies. The results of your studies will be generated and updated automatically each time you use the software, so you have nothing special to do. However, if you were using an earlier version of software “Diaoulek”, you want, of course, to recover your lessons and the results of your studies. This is done by the order “!import”. This order must be followed by the absolute path towards a configuration file. You must use the order “!import” for each of the languages you are studying and you should also take care not mixing up your configuration files. As an example In Windows and for the language you study most often, if you were studying that same language with version 1.5 in the directory “Diaou-1.5”, you will write in the command line at the top of the left window:

!import C:\Program Files\Diaou-1.5\diaou.conf

With that order you will recover into your new version 1.6 all your work done with version 1.5.

Attention : If you install software “Diaoulek 1.6” on a USB key, transferring something like 250 Mo of data can take a lot of time and at the next restart of the software it will be even worse. The waiting time can reach up to half an hour on a slow and old computer. The indicators monitoring the loading of the software have been improved but they are still not well adapted to such conditions (sorry). In order to help you be patient, you can display the contains of the directory “BR\FOUND” which is the directory of the lost and found files for the Breton language. At least under Win7, you have at the bottom left of the window the number of items in the directory and this is very useful here. In the “import” phase, you will see this directory filling up and then, after the restart of software “Diaoulek”, you will see that directory emptying gradually. The other restarts will be quick enough and you will have no problem with them.

If you were also studying English with version 1.5 of software “Diaoulek” with a configuration file whose name was “english.conf” (for example), when you study English with your new version 1.6 (with configuration file “diaou_en.conf”), you will write:

!import C:\Program Files\Diaou-1.5\english.conf

Remark : The softwares coming from the Linux world have difficulties with file names when spaces and accentuated letters are included into them. Don't create yourself such files. However, the orders “!import”, “!synchro” and “!synchro0” will accept names like “Program Files”.

When the software has finished transferring the data it stops. You are then obliged to restart it and the new start will take a lot of time, specially if the software is on a USB key (up to half an hour). In fact, the software has to change place to a lot of files and this takes time. For you not to lose patience, you can watch the “FOUND” directory becoming empty. When the software has finished its loading and is ready and waiting, you must write in the command line the order “!ccdb” (**C**heck and **C**orrect **D**ata **B**ase). The data-base will then be verified, adapted to the software new version and corrected if necessary. You are now ready for an update of your Breton or English lessons.

Semi-automatic updating of the lessons.

The updating of the lessons concerns only the Breton/French and the English/French lessons which are published on the site of software “Diaoulek”. On the site, the Breton/French lessons are garnered into packs of 5 or 6 lessons together with their sound files. For technical and cost reasons, it was historically the only solution. However, the experience has proved that the lessons are

changing (slightly) very often and so the packs were never up to date (they are automatically updated now). Moreover, to download 6 lessons and 6 audio files when a comma has changed place in some particular lesson is not very efficient. Since version 1.4 of software “Diaoulek” you can automatize the updating of the lessons and audio files. In the configuration file “diaou.conf”, you have a line:

Url_update :> ********** <:

where an Internet address is written. At that address, you have the last version of the lessons and audio files. You only have to write the order “!update” in the command line at the top of the left window and the software will connect to Internet at the address indicated on the configuration file. The software will compare the md5 sums (the fingerprints) of your files to those of the site. If a difference is found, the file on the site is downloaded, the md5 sum of the downloaded file is computed and is compared to the expected sum. In case of agreement, the downloaded file will be substituted for your own file. Moreover, the new lessons will also be downloaded. So, in the case of a new install (without having used the order “!import”), you will download about 310 lessons and 310 audio files and also the Tomaz Jacquet Breton-French dictionary and the “.tei” French-Breton dictionary. This will take some time because you have about 250 Mo of data to download. You may have a bad connection to Internet, but this is not too much of a problem because your download is made of independent files. If, for some reason, your connection is down, it is enough to stop and restart later software “Diaoulek”. When your connection will be active anew, you will restart the software, write “!ccdb”in the command line for security and continue the updating from where it had stopped by writing again the order “!update”. When this command has completed its action, it will open a window where you will find a summary of what has been done, you will also be advised that the software will stop and that you have to restart it and write the order “!ccdb” to verify, adapt and perhaps correct your data-base. The updating of your data-base must be done every three months or so, or each time that a new pack of lessons has been published and this is announced on the site's RSS feed. So, if you have subscribed to the RSS feed, you are automatically advised of that event.

For the English/French lessons and dictionaries, the process is the same. When you study English, that is to say when you have activated the “diaou_en.conf” configuration file, you will type the order “!update” in the command line.

Remark 1 : As for the order “!import” in the case of an installation on a USB key, and if you have downloaded more than 600 files (case of a first installation), the restart of the software can last for half an hour. In order to compensate for the poor behavior of the start indicator and make you be patient, you can display the contains of the “FOUND” directory and watch this one getting empty.

Remark 2 : Why a semi-automatic update and not a fully automatic one ? Simply because I hate programs or systems which are connecting to Internet behind your back, sometimes with very good reasons but often just to verify what you are doing, in fact for spying purposes. This will not be the case for software “Diaoulek”, it is connecting to Internet only when you ask it to do so and only to download files at the address indicated in the configuration file. Any other connection will be due to a virus. Except for the updating of the lessons, software “Diaoulek” works without connection to Internet.

How to use the vocabulary manager “Diaoulek”.

The installation of software “Diaoulek” has now been completed and we have also seen its main possibilities. In the present paragraph you will find some advices on how to use the software to learn Breton. It will not be difficult to adapt these recommendations to the study of other languages.

The lessons which are given together with software “Diaoulek” and that you have downloaded or

updated with the “!update” command are not to be used as such. The ten or so EE lessons are an example of complete lessons but they were mainly written for technical purposes when the software was developed. In the KE lessons, you have basic vocabulary, words that any beginner must learn, but it is hard and tedious work to do such learning without the support of a text. This is even more true for the other lessons.

So, my advice is that you should learn Breton (or any other language) with the text book of a true method. That method can be one chosen by yourself or one imposed to you by your professor if you are a beginner. If you are more advanced in the study of the language, you will also find vocabulary to learn in the books you read. You will only use software “Diaoulek” to learn and review your vocabulary. Each time you encounter a new word or expression worthy of interest, you will search it in the dictionaries by the orders “!shdic”, “!shcid” or even better by the order “!shdic+”. If you find it, you will select it in order to add this word into a “Prov” or “Own” lesson. If you don't find it, you have to add it yourself with a text editor (Notepad+, gvim...) into an “Own” lesson of the “OWN” directory or into any other lesson that you would have created yourself. Your personal lessons are simple text files created on the models of the lessons “ex_simple-bis.txt” or “ex2.txt” or still on the model of the English-French lessons which are in the directory “EN/SA-lessons”. If you are creating yourself from scratch a lesson (except for the “Own” lessons), you must notify it to the software by a modification of the configuration file relative to the language you are studying (file “****.conf”). If you don't do so, the software will not be able to take that lesson into account. If you want to study the “Own” lessons, you will reach them by the order “!shown”. For any other personal lesson, you will call it by writing its alias in the command line at the top of the left window. It may also be convenient to make a copy of that personal lesson into a “Prov” lesson. For that purpose, you only have to study your lesson in the normal display mode and after you have finished your study, you will select all the entries for the creation of a “Prov” lesson.

So, if you wish, everything will come down to the study of the “Prov” lessons. The order “!shprov” allows you to display and select these lessons. In fact, to do well, it would be necessary to select all the “Prov” lessons for a summation into a short lived lesson and to study that lesson in the two directions QR and RQ. If you have too many “Prov” lessons, you can select only some of them according to the conditions of their creation. These informations are given in the comments of the “Prov” lessons and can be displayed as on figure 8. The options available by pressing on the “+” button may also help you in your selection. It is however important to study every day all the lessons, some in direction QR and the others in direction RQ. From time to time you will alternate the direction of study so each word will be studied in both directions.

After each study, it is proposed to you the creation of another “Prov” lesson with the words which remain unknown, so the words will stay into the “Prov” lessons as long as they have not been learned and declared as known during 5 consecutive days (the default life span of a “Prov” lesson) and after all the recalls in the sequence of oblivion. As we can suppose that in the long run you will learn every word, even the most difficult ones, the number of words in the sum of the “Prov” lessons keeps decreasing. You must then replenish your collection of words which are into the “Prov” lessons by new words encountered elsewhere, into the lessons of your learning method, or those given by your professor or those found into the texts you are reading. Most often, you only have to select these words into the dictionaries by the order “!shdic+”. It is also recommended, when the number of words in the “Prov” lessons is low enough, to take advantage of that situation and to generate and study a “!worst qr” or “!worst rq” lesson. The forgotten words of these lessons will also be added to the “Prov” lessons.

If you follow these recommendations, the learning of the vocabulary will rest on the study of the “Prov” lessons. You must study these “Prov” lessons every day, preferably all of them in both directions QR and RQ. If that would take too much time, you will study half of the “Prov” lessons in one direction and the other ones in the other direction. How many words should you have into the

sum of your “Prov” lessons ? That depends on how much time you can devote to the study of that particular language. You will rapidly determine the number of words corresponding to that amount of time. It is useless to introduce more words into your “Prov” lessons. Too many words will only ruin your learning.

Presentation of “Furch 0.1”.

“Furch” is an assistant for reading texts written in some language that you don’t completely master. It will not try to translate texts but it will often avoid to you the boring toil of turning the pages of a paper dictionary. For that you need to have some electronic bilingual dictionary and an appropriate software that will make the link between a displayed text and the dictionary. “Furch 0.1” is the first version of such a software. This version does not have much feature, still it will allow you to display formated or not formated texts, to capture something on the web and insert it into a file. By a simple click on a word of the displayed text, you will get the translations of that word. You can also analyze a whole page of text and display with a red background all the words which have not been recognized by the software. This is a handy tool for the one who tries to improve the software or complete the dictionaries. At present time the “Furch” engine works only for Breton. It tries to recognize words with their mutations (changes of the first characters), their conjugations (changes of the terminations), their different writings (3 or 4 orthographic systems for the Breton language) or even words in old publications which were written with some fantasy. Taking into account for all those difficulties, you cannot hope to obtain a unique result. It up to the reader to select among what has been found by the software which translation best corresponds to the text meaning. As for a “Google” search on Internet, it would be necessary to class the results by their degree of likelihood. This has not been done in version 0.1. Happily enough, we don’t have 250,000 results but at most 10 or 15. We can also have no result at all for two reasons:

- The word is not in the data-base.
- The software is not smart enough to recognize the word.

All the words in a page which have not been recognized may be displayed by “Furch” with a red background thus sparing you the time that you would have lost by clicking on them without any result. However, in the case of compound words with hyphens, even if they are declared as unknown, you can obtain the translation of each of the components of those words when you click on them. “Furch” allows also you to search manually the Breton/French and the French/Breton dictionaries. You can also mark some results, among those automatically or manually found, to make a lesson that you can latter study with “Diaoulek”. Let us see now how to launch and use “Fuch”.

Launching or leaving “Furch”.

Your software always start in its “Diaoulek” state. It has always to load the dictionaries and the lessons which are parts of its data-base. It then computes or loads indexes to search the data-base. “Furch” uses the same data-base but it does not use the same indexes. So you must tell to your software to go in its “Furch” state. This is done by the order “ !furch ”. If you are in the “Furch” state, you can go back to the “Diaoulek” state by the order “ !diaou ”.

Let us suppose that we are in the “Diaoulek” state. In the command line at the top of the left window we write “ !furch” and then press the “enter” key. On the left window, the software will just write “wait ...” while it is loading or computing its indexes. When that is finished, it will write : “ We are in the Furch state”. At that point, you will be able to use the orders specific to the “Furch” state. We have only 5 orders : “ !bib “, “ !capt “, “ !shbib “, “ !shcapt “, and “ !analy “.

We will now detail the action of each order.

Reading a book file of your library.

At present time, “Furch” works only for Breton to French. If you are in that case, you may have used the order “!update” to load lessons, sound files, dictionary and some other text files. These last files install themselves automatically into a “./BR/BIB” directory. They are formatted or unformatted text files and were made for the original “Furch” project which was developed years before the “Diaoulek” project. They are texts of old books in Breton and are given with simple formatting marks that will generate a display as close as possible to the one of the original publication. At present you have “tis-tot.txt”, the “An ti satanazet” (the house haunted by Satan) book by Jakez Riou which is in the KLTG orthography and the “Th-tot.txt” file which is the book “Buhez Santez Thereza” (Life of Saint Teresa) by Father Jezegou, a book written without any firm orthography system. You may also add yourself any unformatted text file to the “./BR/BIB” directory, they will automatically be taken into account. The “./BR/BIB” directory is your library, the software will not remove or modify the files which are in this directory, you can only read them. As a first example, we will read the “tis-tot.txt” file. For that, we type into the command line at the top of the left window the order : “ !bib tis-tot.txt” (without the “ ”) and we will obtain something like in figure 15.

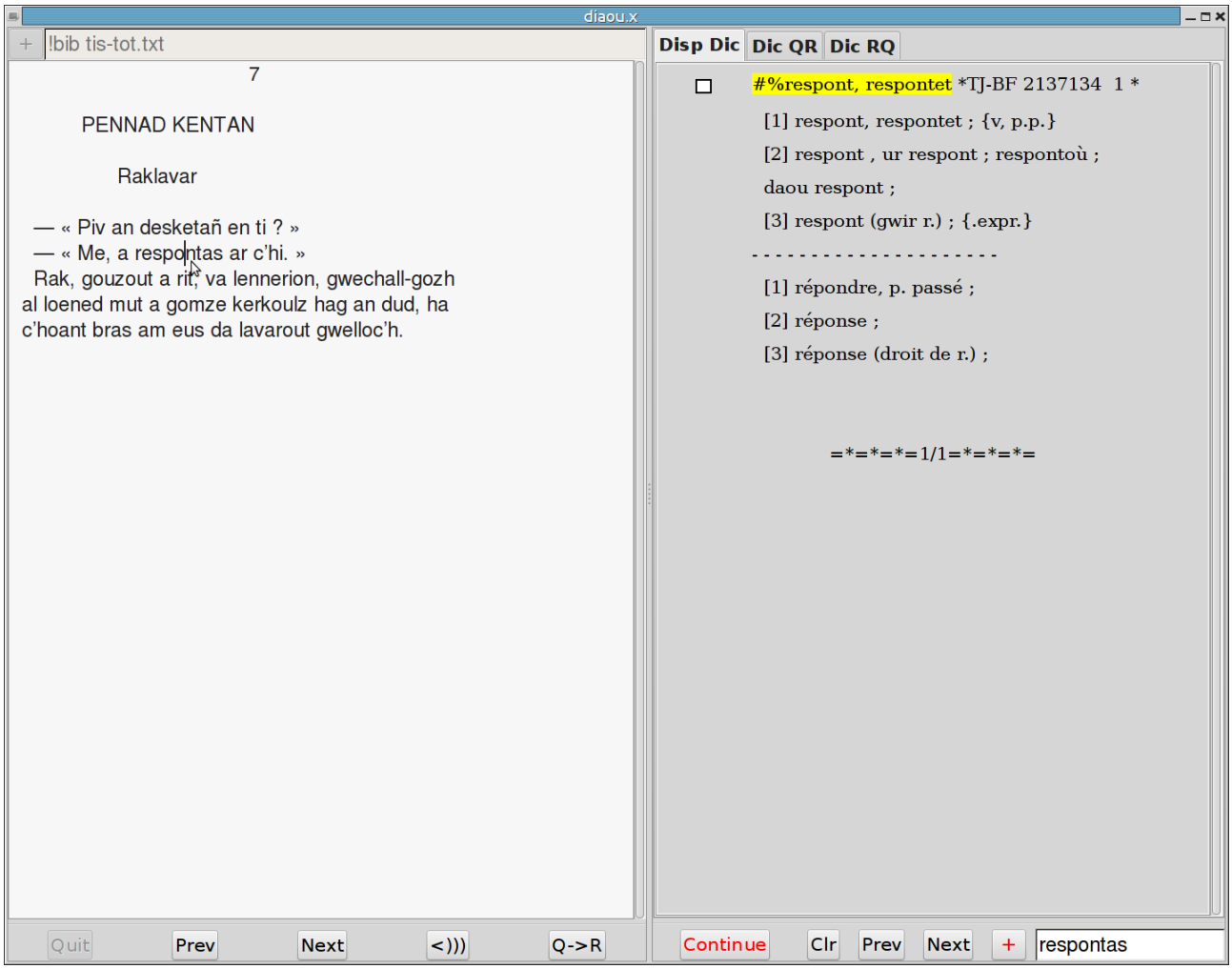


Figure 15 (furch-2.png). Display of a text file located into your “library” directory “./BR/BIB”

The text is displayed in the left window and in the right window, a book-note with 3 tabs has appeared. At first, on the first tab labeled “Disp Dic” (Display Dictionary), you have nothing. On the contrary, on the second and third tabs, labeled respectively “Dic QR” and “Dic RQ” (for dictionaries QR and RQ), you have the Breton-French and French-Breton dictionaries like on figures 13 and 14. The interesting thing, and in fact the main objective of “Furch”, is that you can click on a word and have its translation. For example, on figure 15, the word “respontas” which is a conjugation of the verb “respont” (to the preterit), was clicked. On the right window, the first line with some yellow background color on it, can be selected by a click on the square at its beginning. In that case, when you leave the lecture of the book, it will be proposed to you to make a “Prov + Own” lesson for a later study in the “Diaoulek” state. In the case of figure 15, there was only one response for the word “respontas” and it could be displayed on the first page of the “Disp Dic” tab. This is not always the case and you can have several responses that will be displayed on successive pages of tab “Disp Dic”. You can navigate through these pages with the “Next” and “Prev” buttons at the bottom of the right window. If you make a click on another word in the left window, the tab “Disp Dic” (Display Dictionary) of the note-book will be cleared and the informations on the new clicked word will be displayed. However, all the selected items will remain in memory for the creation of the “Prov” lesson if you chose that possibility at the end of your lecture. The other, non selected items are forgotten each time that the “Disp Dic” tab is cleared.

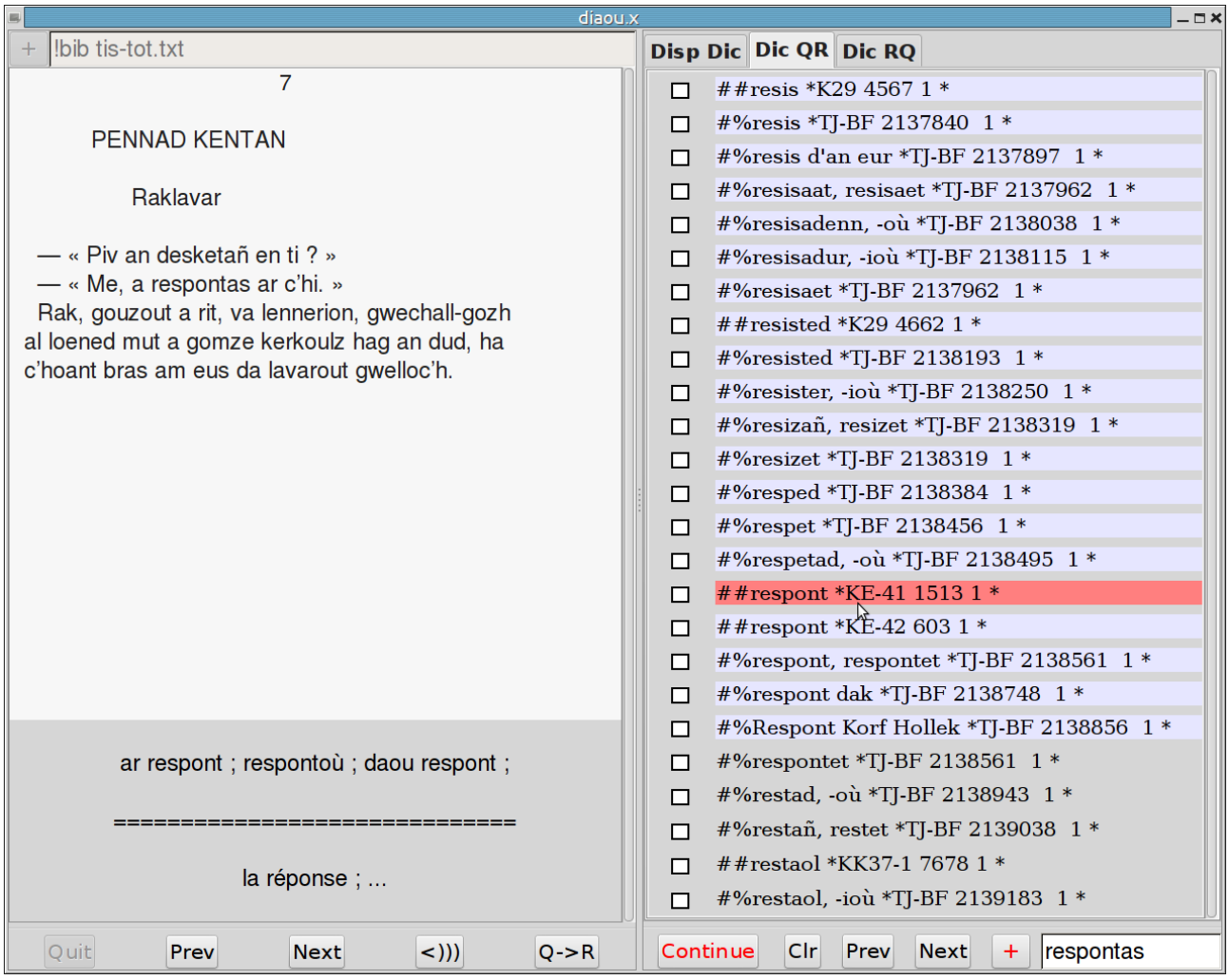


Figure 16 (furch-5.png) You can also consult the dictionaries on the second or third notebook tabs.

It can also happen that the software does not find the word that you clicked on, but you can also try a manual search into the QR and RQ dictionaries. The little command line at the bottom of the right window is just for that purpose. The “Furch” software even duplicates the clicked word on that command line (on figure 15 the word “respontas”). You will probably have to modify that word (mutations, conjugations, old orthography…) in order to get the word you need. It is enough to type the first characters of the word.

On figure 16, we have clicked on the “Dic QR’ tab and we can navigate through the pages of the “QR” dictionary with the “Prev” or “Next” buttons or with the little search line at the bottom of the right window. On a page of the dictionary, we have a list of words followed by cryptic indications for the software to retrieve the information if it is asked to do so. This was the case on figure 16 where the line with the word “respont” has been cliqued. The information relative to that word has appeared at the bottom of the left window after the book page. If another line of the “QR” dictionary is clicked, its information replaces the previous one. So, we have always a few lines of text after the book page. That may not be desirable and you can clear them by pressing the “Clr” button at the bottom of the right window. If a few words are of some interest for you, you can select the lines of the dictionary by a click on the little square at their beginning and they will be transferred together with their information on the first tab as in figure 17.

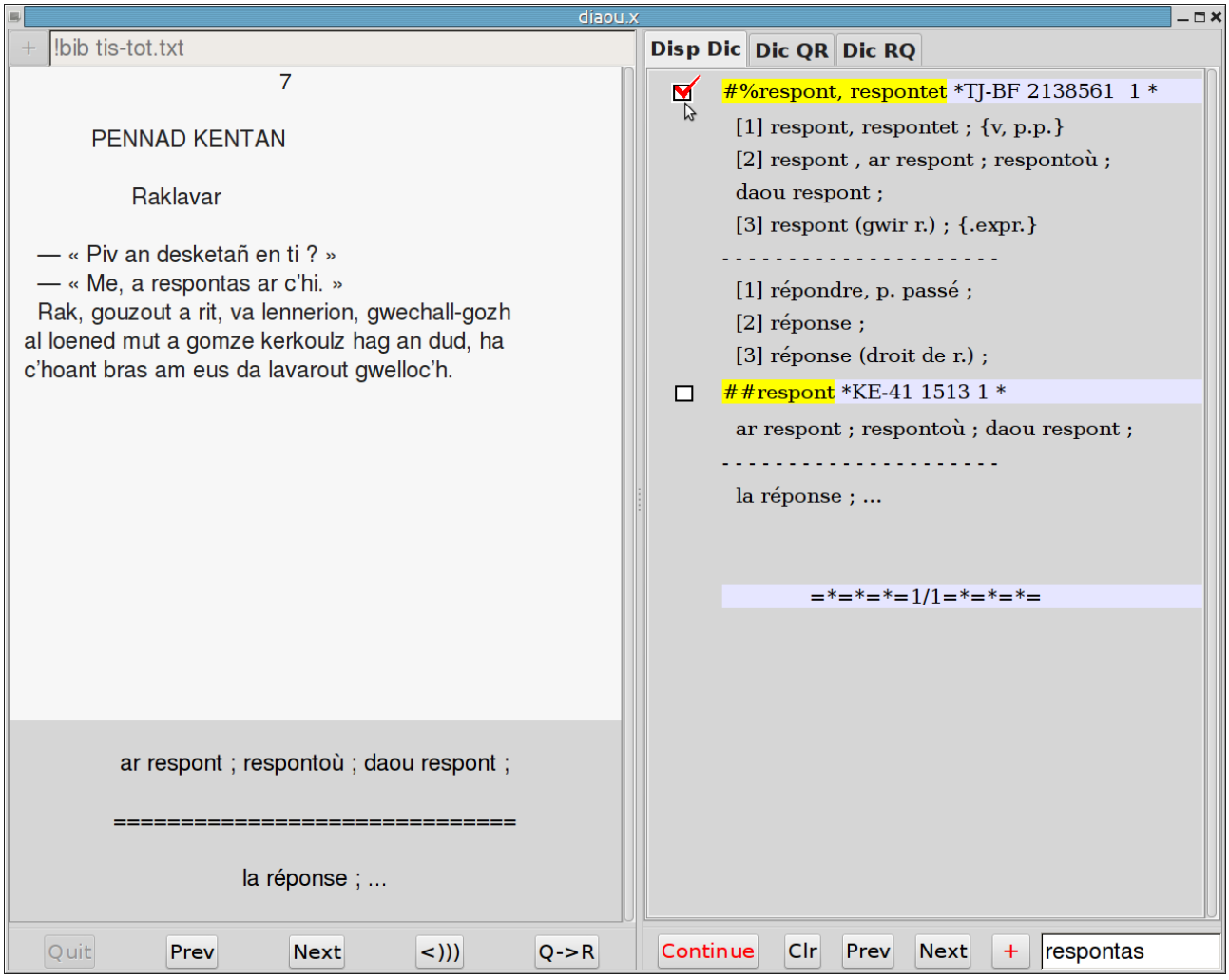


Figure 17 (furch-7.png) Another word selected in the “QR” dictionary has been added to the first tab page and the first wors has also been selected.

As was said earlier, we can also select words on the “Disp Dic” tab pages. This is the case on figure 17 and the article “respont, respontet” will remain in memory for the creation of a “Prov+Own” lesson.

Capturing and editing texts.

In the previous paragraph, we have seen the display of a text file from the “./BR/BIB” directory which is supposed to contain books or articles of your personal library. That is to say files that you don’t want to modify and, in fact, they are not editable. However, you may also want to write text in Breton or, for example, to capture some text in the Breton Wikipedia.

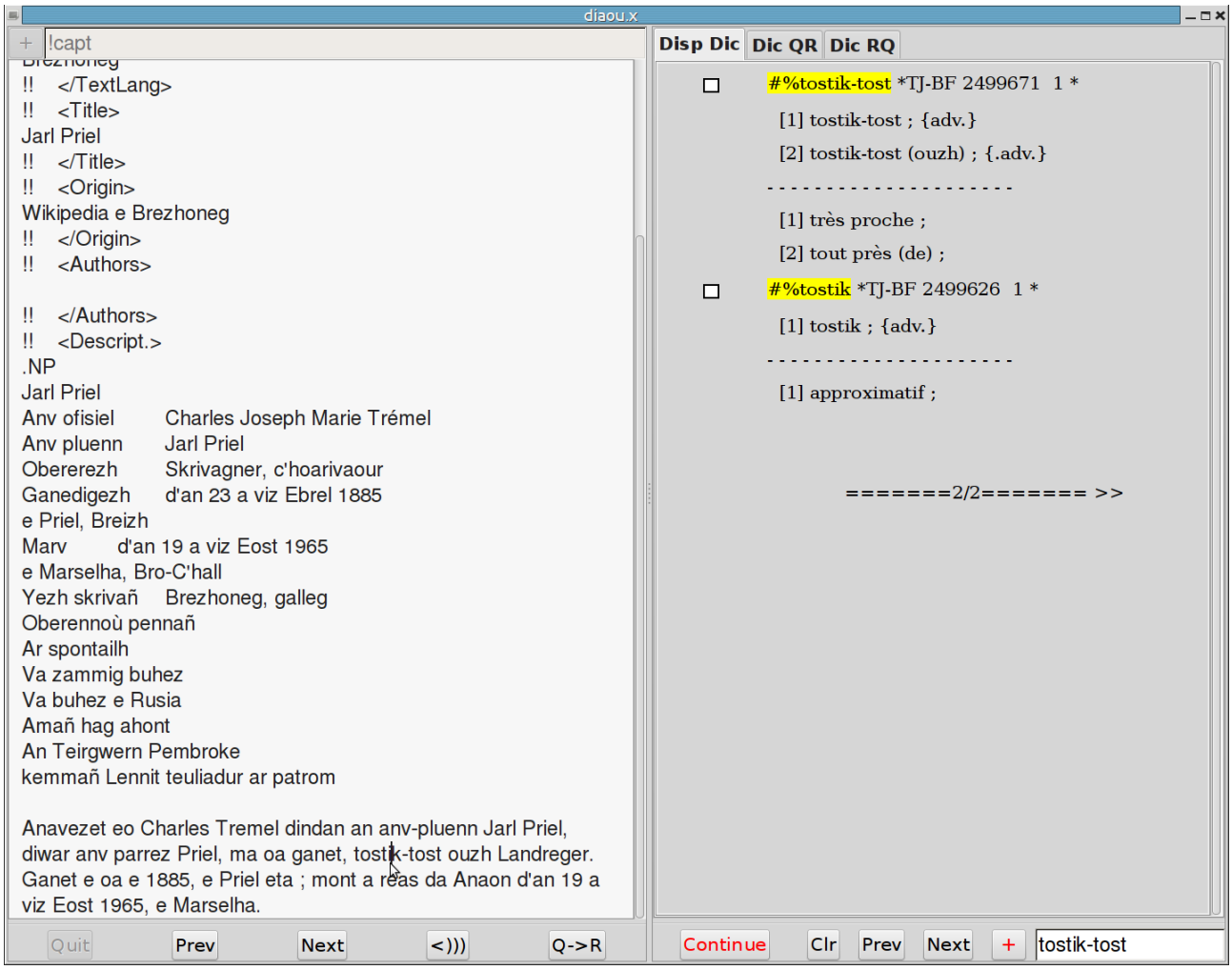


Figure 18 (furch-3.png). Some text has been captured with the mouse in “Wikipedia” and is displayed on the software left window.

In order to create an editable file with the “Furch” software, you will simply type the order “!capt” in the command line of the left window. This order will create a file in your “./BR/CAPT” directory and that file will be editable. The contains of that file will be displayed on the text zone of the left window. At its creation, this file is not empty. You have on it the date of creation and the skeleton of a technical note that you can fill with a title, an author name, a subject, comments, etc… That note is of no use so far but later it can be used to search among all the files and help retrieve a particular

one. You can type what you want on the text zone but you can also insert text captured with the mouse into another application like “Libre-Office”, “Vim” or your web browser. On Linux, you will highlight the text that you want to capture by dragging the mouse cursor on your screen. Then, with a middle click of your mouse, you will insert that text at any place of the left window text zone. If you have a “MS-Windows” operating system, you can capture the text with the usual “CTRL C” and then with a “CTRL V”, you insert it. Now, what has been said for files in the “BIB” directory remains true. The usual left click on a word will give you its translation in French if the software can found it. That was the case in figure 18 for the compound word “tostik-tost”. The software has found the words “tostik-tost”, “tostik” and also “tost” which is not on figure 18 because there is not enough place on the first page of the “Disp Dic” tab. You can reach the second page, where you have the word “tost”, by clicking the arrow with the label “2/2” or the “Next” button at the bottom of the right window.

Software “Furch” or more exactly software “GTK2” which is used in “Furch” , has very limited editing capabilities, it will only create unformatted text files. You can however insert a “jump to next page” order into your text by typing “.JP” at the beginning of a new line. That order is, however, not taken into account immediately but only after a new compilation of the indexes. This is done when you leave the edition of that file by a click on the “Continue” button at the bottom of the right window.

A tool to analyze texts.

When you are reading a file in the “BIB” or “CAPT” directories, a simple click on a word will induce the “Furch” software to search its data-base for related articles. This search takes into account the preceding and the following words and it will detect invariant expressions composed of two words. When you have a hyphenated word, it will also analyze each of the components of that word. So, often you have some more or less relevant response. It can also happen that you have no response at all, the word being completely unknown to the software. The question is how often ?

There is a tool included in “Furch” that will give a visual response to that question. In the command line at the top of the left window, you will type the order “!analy” which must be followed by the name of a file in the “BIB” or “CAPT” directory. If the file is in the “CAPT” directory it will be editable and if it is in the “BIB” directory, that will not be the case. You will also be able to click on words to have their meanings but the words unknown by the software will be displayed with a red background on the left window. One example is shown on figure 19. There is much red on that figure ! In fact, it was the first version of the “Furch” engine and of the “!analy” tool. Many ways to improve this tool and the search engine are suggested by figure 19. For example, it does not seem necessary to put a red background for space or punctuation characters. That will only be a cosmetic improvement, however. Other improvements may be related to the Breton grammar such as for the words “d’ar” or “n’eus ket”. The words “oa”, “oamp” show that we must also introduce the conjugation of the irregular verbs. The proper names such as “Theresa” or “Thereza” are written that way here in place of the more modern “Tereza” and must be added to the dictionaries. With that tool, it is easy to imagine how to improve the “Furch” search engine, by a modification of the code itself or by the writing of dictionaries specialized in grammar or old word spellings.

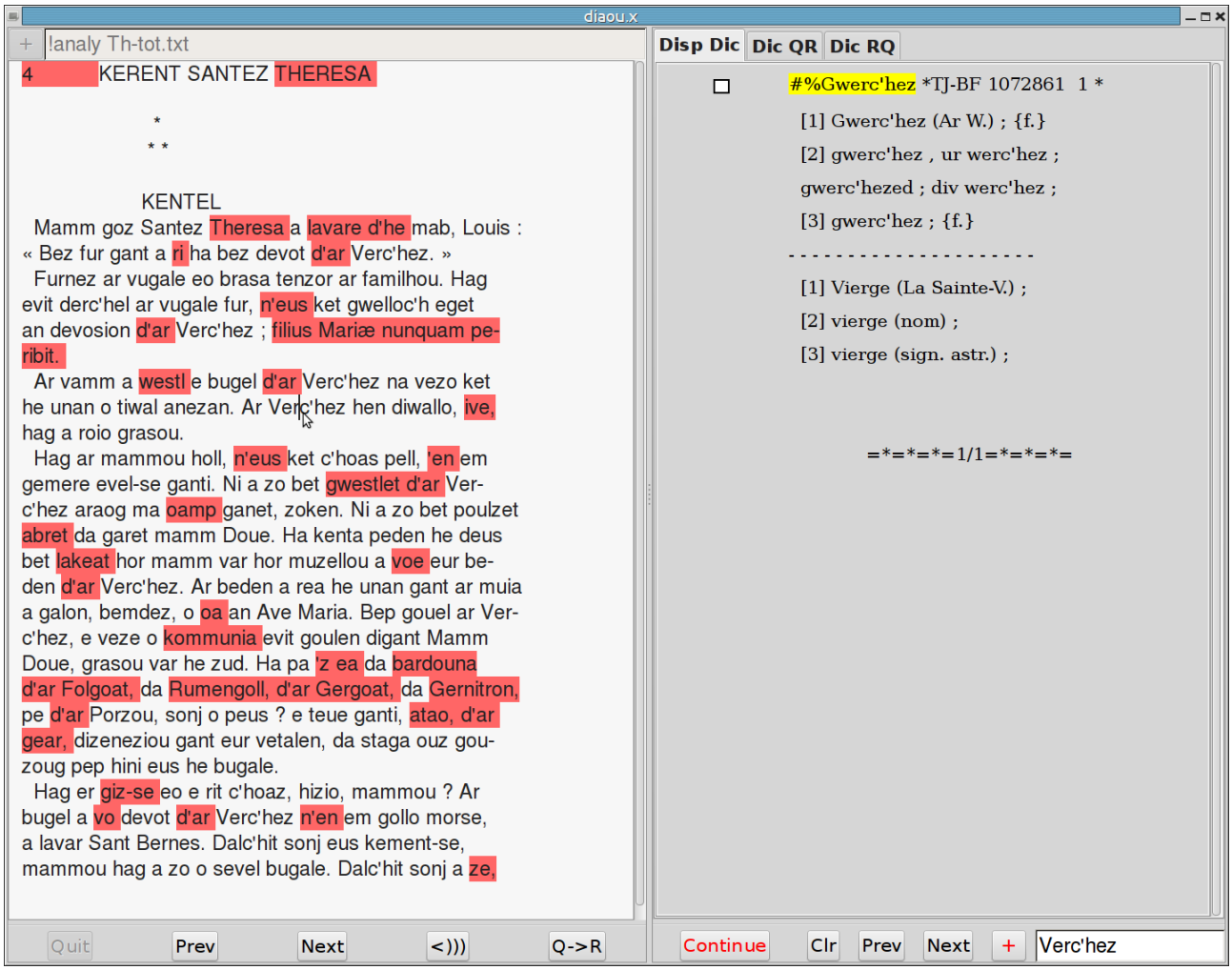


Figure 19 . In red you have the words unknown by the “Furch” engine, here in a page of an old book. This figure is history, it was the first time that the order “!analy” was applied to a text page and with the very first version of the “Furch” engine.

Listing and selection of the registered text files.

As it was said above, the “Furch” software displays text files which are into the “BIB” and “CAPT” directories. The texts in the “BIB” directory cannot be changed and the texts in the “CAPT” directory can be edited. You can display a text by the orders “!bib” and “!capt” which must be followed by a file name. If you don’t give a file name after these orders, in the case of “!bib” nothing will happen and in the case of “!capt”, a new file will be created. If you give a name which does not correspond to a file name in these directories the software will signal it and wait for some other order. In order to help you to choose your files, the “Furch” software has the orders “!shbib” (show bib) for the files into the “BIB” directory and “!shcapt” (show capt) for the files into the “CAPT” directory. These orders are very analogous to the orders “!shprov” and “!shown” of the software “Diaoulek”. With these two orders, you will be able to select existing files for display. For now, the files are ordered by date of last modification (or creation). Obviously, these orders need to be extended to include different ways to class the files.

Future improvements of the “Furch-Diaoulek” software.

After years of stagnation, the development of “Furch” has started again on new basis. You can now capture and edit texts and select words for a future learning in the “Diaoulek” software. However, the “Furch” engine needs to be much improved and it needs also to be extended to other languages specially English when bilingual dictionaries are available.

Much work has already been done and the “Furch-Diaoulek” software has reach a state where it starts to be useful. However, the perspectives for the incoming years are not good. “Furch-Diaoulek” is using the “GTK2” library to display everything on your computer screen. Unfortunately version 2 of “GTK” is now abandoned and is replaced by version 3 which is very different and even not compatible with the previous version. It does not seem possible to remain with version 2 but adaptation of the “Furch-Diaoulek” software to the third version of the library “GTK” will induce at least one year of difficult and sterile work.

Conclusion.

Software “Diaoulek” is a vocabulary manager. With it you can study several languages. Except for the Breton language, you will have to write yourself your own lessons on the models of the ones provided when you install the software. For Breton, you have something like 330 Breton-French lessons which can be downloaded and updated at will. This represents a vocabulary of about 6000 words or expressions, enough to meet the needs of many beginners. Moreover, the Tomaz Jacquet dictionaries will extend that vocabulary to more than 30000 words or expressions.

The “Furch” software can help you to read texts written in Breton and it has begun to be integrated into “Diaoulek”. With some clicks, you will be able to know the translation of a word in French or select it for a further study with “Diaoulek”.

It only remains to me to wish you good luck and courage for your language studies. You can contribute to the project by improving the published lessons and by adding your own ones for everybody profit.

You can join me at the address indicated on the “Alnfurch” site.

Alphonse Nandert, November 30, 2016.