

ANALOR Manual

<http://www.lattice.cnrs.fr/Analog>

ABOUT

ANALOR is software provides an automatic segmentation of recordings. ANALOR first developed for the prosodic analysis of French. The method of analysis relies on the acoustic segmentation of the melodic line and the analysis of pause duration. Practically speaking, ANALOR allows the recognition of two types of salience:

- a) Strong instances of salience (converging prosodic parameters), considered as marking the end of units ('periods') signaling the way in which the speaker organizes the conceptual or communicative packaging of the message.
- b) Less remarkable points of salience associated with the identification of prominences in terminal syllables (isolated cues: F0 variations, or syllable or pause duration).

Download Instructions

1. If you don't have MATLAB on your computer (Windows only):
 - A. The first time you download **mcrinstall.exe** and execute it ([Installation du moteur Matlab](#) utilisable uniquement sous Windows).
 - B. If you already downloaded **mcrinstall.exe**, you don't have to repeat it.In any case, download **analog.exe**. [Executable Analog \(Analog.exe\)](#) utilisable uniquement sous Windows.
To execute ANALOR, double-click on **analog.exe**.

2. If you have MATLAB on your computer (any operating system):
You download **analog.m** ([Source Matlab\(analog.m\)](#) utilisable avec lea plateforme Matlab sur tout système d'exploitation).
To execute ANALOR, you have first to launch Matlab, then to change the Matlab current directory to the directory containing the file **analog.m**. There are many ways to change the Matlab current directory: for instance you can type "cd" followed by the directory name in the Matlab Command window.

You don't need to open the file analor.m.

After that you type "analor" in the Matlab Command Window. The Analor Window should open.

Here are some major instructions, but of course you can explore all the buttons and menus by yourself (try also right clicking: there are several context menus).

Opening ANALOR

When opening ANALOR, don't worry about the message "Pas trouvé le fichier default.anlp". Just close it (we will see later the reason for it).

2 menu items are available Figure and Fichier. The menu Figure contains some useful commands to present results of analysis.

With the menu Fichier you can open an .anl file that already exist in your computer (submenu "ouvrir") or you can import 3 kinds of files: xlm, ircam and PRAAT (submenus "Importer").

In order to import a PRAAT file, you first have to prepare a collection file, so two operations are needed:

1. How to prepare a collection file in PRAAT:

The collection file must be a binary file containing 4 Praat objects:

1. The "Sound" object (mono .wav file)
2. A "PitchTier" object:

To get the PitchTier object, you have to execute the command "Down to Pitch Tier" which appears when you select the Pitch object.

3. An "IntensityTier" object

Same thing for the intensity: after executing the "To Intensity" command, you need to execute the "Down to Intensity Tier" command.

4. A "TextGrid" object

The TextGrid can include as many text tiers as you want. BUT it has to include at least a syllabic tier (i.e. syllable segmentation of the recordings).

2. How to import the PRAAT collection file into ANALOR:

You choose a collection file by clicking on the "Fichier>Importer (praat)" menu item. As soon as you open a praat collection, analor opens an "Enregistrement" window where you should create an '.anl' file. Next time you work with these data, you won't need to import the Praat collection file, you just have to open the .anl file.

Looking at your data and correcting it with ANALOR

After opening a file, you will see more buttons in the menu, together with the representation of all the information needed in the top panel (panel 1), which is the data panel: sound bar, (top light blue) F0 the pitch plot in blue, the intensity plot in green and all the text tiers below the graphics. The vertical lines are given by the segmentation of the first tier. The scroll bar and the arrow buttons in the middle of the window let you move the temporal window, and there are also buttons for zooming in and out. See also the "**Fenetre**" (=window) menu items

Fenetre (window)

With the "window" button you can zoom in, zoom out, see all the sound plot or select a certain interval (by choosing a starting point and an end point).

Panel 1

Panel 1 menu gives the possibility to clear or to show (check [✓] sign) the representation of any of the above items: Fundamental frequency (f0) plot, F0 vertical lines (grille), intensity plot, intensity vertical lines, sounds bar, parcour selectif and temporal bar (duration).

Sound

To hear the sound, you have to click on the turquoise bar at the top of the window. You can move both ends of the bar by dragging its black edges. ! be careful of the acoustic quality of your sounds and try to begin to work with as clean acoustic material as possible.

Tiers (interval tiers)

You can make manual modifications on the text tiers. For instance you can move somewhat a text by dragging it, you can change or suppress a text by right clicking on it, write a new text in an empty segment (right clicking), etc. You can even create a new tier by using the "Tiers>new tier" menu. The "tier" menu includes as many submenus as exist in the original file. If you have chosen to add a tier, it will be automatically given in the menu. Each submenu includes the following orders (most of them are self-explanatory):

Masquer (=mask)

Solidariser (but not in the top tier submenu): a command that allows you to ensure that the boundaries of the present tier are aligned with the boundaries of the top tier.

Renommer

Remonter

Redescendre

Dupliquer

Supprimer

Boundaries (vertical line)

you can move a vertical line by dragging its handle (in the white band), you can suppress it (right clicking), you can also create a new boundary (left clicking in the white band). Remember if this tier is "solidariser" then boundaries movements are constrained.

Pitch

By right clicking on the pitch plot you can also make manual modifications of it. when cursor is on the pitch contour, you have to Right click on it. You will see the F0

at the temporal value of the very point your cursor is pointing on. You can work at the level of one pitch segment or at the level of the points: by choosing “details” in the content menu, the F0 plot will become red dots instead of blue contour. You can also choose to adjust a part of this F0 segment by define it: first left click on the first point of your selection, then left click on the last point of your selection, then you have several possibility of adjustment:

To raise in 1 octave (1 octave=12 semi-tones (ST)), to lower in 1 octave or to erase the segment.

(if you click twice on the same point, you can act on a single point.) Make sure your cursor is on the red dots region, since if not – all the chunk, not only the selected one, will be corrected.

When you work at the detail level it’s a good idea to zoom in to see distinctly the different red dots. It is better to hide the intensity (checking it off in the ‘Panneau1” menu), because the intensity graph may block you from clicking on the pitch graph).

Statistics

The data window can be studied statistically, in order to look for anomalies in the pitch. Execute the command “Statistiques > Statistiques F0” and right click in any interval of the histogram. A “parcours” menu appears, which allows you to see where does the pitch take the values you selected (use the red arrows on the left in the main window). It helps you to find the locations of possibly wrong values (“outliers”) of the pitch if you select extreme values in the histogram. you can safely correct some obvious errors produced by Praat, even on very clean recording.

There are 3 statistic objects: F0, intensity and duration. Each statistic window shows the deviation of its values in the examined file plus a summary of the Minimum, Maximum, Mean and median values. The statistic window can be saved as a figure.

Extreme values in the statistic object should be examined carefully and if an error has been found then it can be corrected manually by right clicking on a line in the statistic figure. Three options are available:

1. To track all the places in the sound file that has this given value. You will see red arrow at the first requested category of values and pink arrows at the other requested values at the same category. Only the "red arrow" value can be changed. If you want to manipulate the next value, you have to move to it by clicking on the arrow bar on the left (left-right red arrows).
2. To track all the values above the histogram you point at.
3. To track all the values bellow the histogram you point at.

Statistics of intensity

The figure shows two histograms: blue one for F0 absent and red one for F0 present.

Statistics of duration

There is separate statistics for pauses for hesitations and for "others" (syllables)

SAVING YOUR DATA

Each .anl file can be saved as .anl again by the "Fichier>enregistrer (sous)" button, or as Praat file, (as a court (=short text) or as a binaire (=binary)).

ANALYSING YOUR DATA

The bottom panel ("panel 2") is used for analysis visualisation. Two sorts of analyses, periods and prominences, are available in the main menu. You first have to fill in a parameter form by executing the command Perodes or Prominence>Parametres. The Parameters window contains calculation values and textual conventions.

Textual conventions:

- Nom de la tire syllabique. In case you have more than one syllabic tier, you name each tier differently (i.e. syll-A, syll-B) and change the rubric "nom de la tire syllabic" each time with the relevant tier.
- Marqueurs d'hesitation (equivalent of French "euh").
- Marqueurs de pause ("#" for instance)

Before quitting the parameter form (by clicking the button “Appliquer”), save the new values of the parameters by using the button “Enregistrer” below “Fichier de parametres par defaut”. You will never see again the message indicating that the file “default.anlp” is missing when you start analor, and you won’t have to edit the parameters again.

After that, you can **detect** automatically the periods (Periodes > Detection) and/or the prominences (Proeminences > Detection).

ANALOR is computing periodes at three levels of acoustic parameters: ++ (solid red line), + (dashed red line), for all pauses (red diamond). If you want to add a period, you have to click on the menu Period>validation and to select ajouter (=“add”)

After detecting period or prominence you can **validate** Analor calculation at once (periode>validation) or to validate every calculation by itself by right clicking on the period arrow that is touching the panel 1: you can validate, add or cancel analor's calculation. After the validation process all the periods are marked in a new "period" tier.

Here also you can choose to show or to hide (check sign or uncheck) every object: F0, periode, intensity, values of pauses, values of period in "panel 2" menu.

Values of pauses: if you right-click on the red spots below the graphic, you will find interesting information. This information will not be shown if you hide this object.

Values of periode are given at the bottom of the panel 2.

Literature

Avanzi, Mathieu; Lacheret-Dujour, Anne; Victorri, Bernard, 2008. ANALOR: A Tool for Semi-Automatic Annotation of French Prosodic Structure. *Proceeding of the 4th International Conference of Speech Prosody 2008*. Campinas, Brazil.

www2.unine.ch/webdav/site/structuration_periodes/shared/articles_AM/avanzi_analor_sp08.pdf

Avanzi M., A. Lacheret- Dujour, B. Victorri. 2007. Analor, un outil d'aide pour la modélisation de l'interface prosodie-grammaire. *Actes du colloque CERLICO*, Nantes, à paraître.

Lacheret A. & B. Victorri. 2002. La période intonative comme unité d'analyse pour l'étude du français parlé : modélisation prosodique et enjeux linguistiques. *Verbum*, XXIV, 55-72.