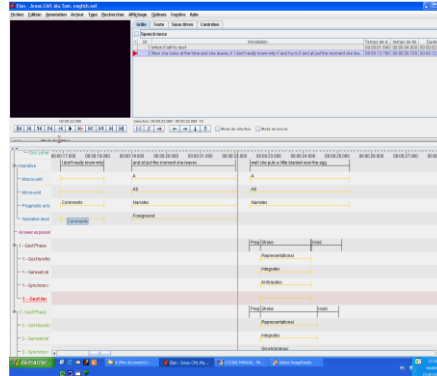


Multimodal Data Transcription and Annotation with *ELAN*



Coding Manual

Projet ANR Multimodalité
ANR-05-BLANC-0178-01 et -02

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In consultation with :

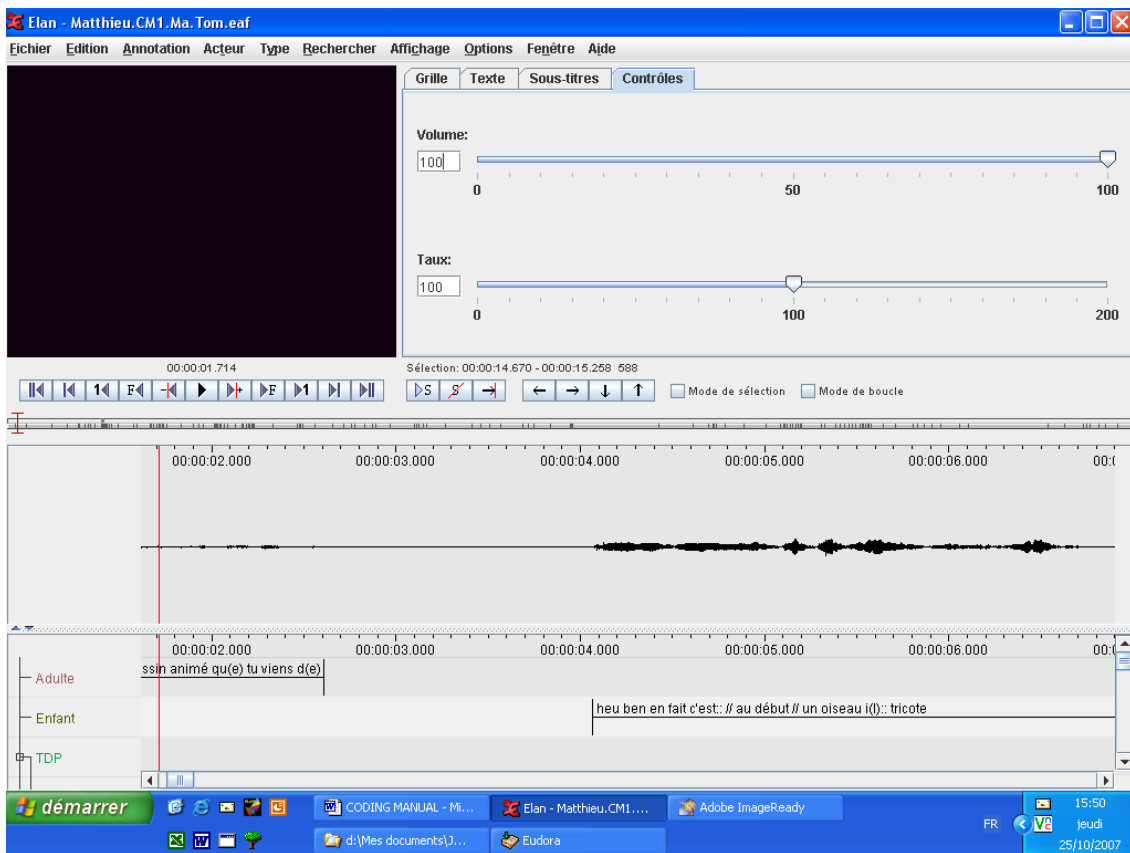
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Coding manual

1. Transcription and conventions of transcription
2. Linguistic Annotation (6 stages)
3. Narrative Annotation (5 stages)
4. Annotation of explanations (1 stage)
5. Gesture transcription and analysis (5 stages)

The transcription of both the narrative and gestures are carried out using the software *ELAN*.

Here is an outline of the interface:



1. Transcription conventions

- The transcription of the words of the speakers appears on two tracks

< adult > < child >

The screenshot shows the Elan software interface. At the top, there is a menu bar with options like 'Fichier', 'Edition', 'Annotation', etc. Below the menu is a table with columns for 'Nr', 'Texte', 'Annotation', and 'Temps de d'. The table contains five rows of transcription segments. Below the table is a waveform showing the audio signal. At the bottom, there is a detailed transcription track with a tree view on the left showing levels like 'Adult', 'Child', 'Speech turns', 'Clauses', 'Types of cla', and 'Words'. The 'Child' track shows segments like 'and hu:m', 'and at just the moment s', 'well she puts a little blanket over the egg', and 'then she le'. Arrows from the labels '< adult >' and '< child >' point to the respective tracks in the interface.

- The transcription of the words is to be treated clause by clause.

E.g
 “and after egg it rolled”
 “mmhm”
 “it rolled to the house of the mouse”

- The transcription is **orthographical** and presents the entirety of the remarks of the speakers.

1.1. Conventions of linguistic aspects

the *button = respect the exact pronunciation of the child (“coat” for “goat”; “button” for “mutton”) and
 the *coat precede the phoneme or the syllable which does not correspond to the standard form with the * star sign

the go/ goat
 he ret/ returns = to announce the unfinished words (goat, returns) with a / sign at the end of the word

(be)cause
 (i)t is necessary = highlight the phonemes or syllables elided by ()

[no / know] = to put the terms for which one hesitates between []; to give the two possibilities

heu heum mm = hesitations

Projet ANR Multimodalité
ANR-05-BLANC-0178-01 et -02

- (xxxx) = note the terms or segments impossible to identify by crosses: an x per syllable/ (xxxx)
- {to laugh} {sigh} = transcriber's comments
- NO = use capital letters to note strongly accentuated words; no capital letters for proper names

1.2. Conventions for prosodic aspects

- // = highlight the pauses between two segments of speech
- ? !
exclamation = use these two punctuation marks exclusively and only when necessary, to announce a question or an exclamation
- no::, we::ll = vocalic lengthening

2. Linguistic annotation

Stage 1 : < Speech turns > segmentation of child speech turns

Speech turns are annotated when the words of the child occur :

- after a prompt from the adult during the narrative task ;
- after a question or a prompt from the adult during the explanation task.

Reminder: in the task of recounting the narrative, one considers two types of **prompts**:

1. In case of silence, or too short a narrative, the adult asks "what else happened ? can you tell me more ?"
2. When the child is towards the end of his narrative, the adult asks: " have you finished ? Did anything else happen ?"

The screenshot displays a software interface for linguistic annotation. At the top, there is a control bar with various playback and navigation icons. Below this is a timeline with time markers from 00:00:19.000 to 00:00:27.000. The main area shows a hierarchical view of speech data. The 'Child' track contains several segments of speech: 'y', 'and hu:m', 'and at just the moment s', 'well she puts a little blanket over the egg', and 'then she le'. A 'Speech turns' track below it shows a single segment spanning from approximately 00:00:20.000 to 00:00:26.000, with the text '// and at just the moment she leaves // well she puts a little blanket over the egg // then she leaves'. Below the 'Speech turns' track are other tracks for 'Clauses', 'Types of cla', 'Words', and 'Synt.compl', which are currently empty. A red vertical line is positioned at 00:00:20.000, and a blue vertical bar highlights the end of the speech turn at 00:00:26.000. An arrow points from the text 'after a prompt from the adult during the narrative task' to the start of the speech turn.

Note : in the narrative task, it happens frequently that the child delivers his complete narrative the first time, without being prompted by the adult, therefore, there is only one speech turn to be annotated.

Stage 2: < Clauses > segmentation of the child words in clauses

Work is facilitated by the preliminary transcription of the words clause by clause.

We call a **clause**:

- A predicate matched by one, two or three arguments (logical approach), or
- A continuation of words including a verb matched by its satellites as subject and complement(s) (grammatical approach).

Examples are given at stage 3.

In the case of an **incomplete clause**, one annotates it like a single clause if the speaker formulates a verb.

On the other hand, at this stage, one standardizes the words to allow the linguistic analysis (segmentation in words):

- removal of the signs nonlinguistic such: / () * ?
- removal of the comments of the transcriber between { }
- removal of hesitation marks and vocalic lengthenings
- removal of the false starts when it is of a syllable, a word or a group of words
- removal of the restarts when it is about the repetition of a word or a group of words

Ex (see illustration) :

// and hu:m // and at just the moment she leaves // >>> and at just the moment she leaves

Note: maintain restarts when it is about the repetition of a whole clause or a reformulation.

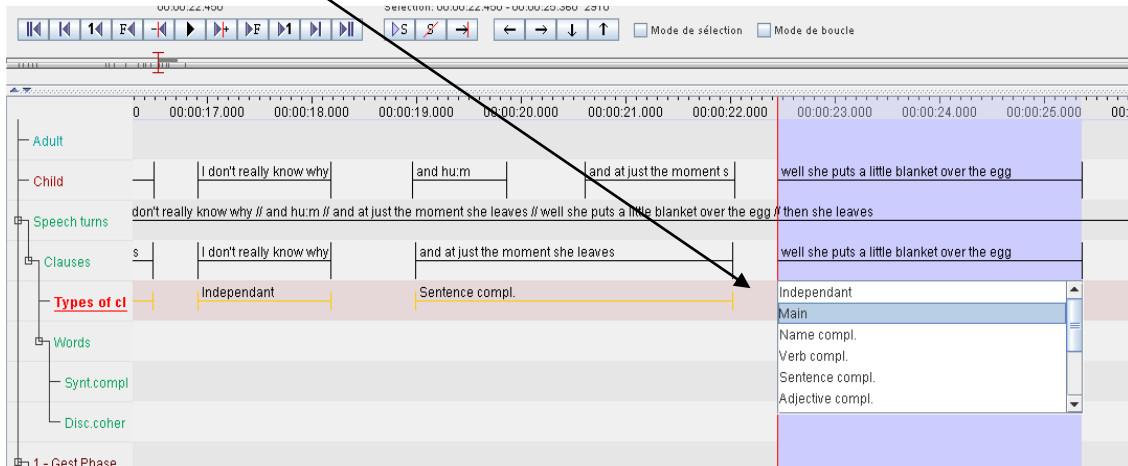
Ex :

After Gromit I mean Wallace's dog he says... >>> After Gromit I mean Wallace's dog he says..

The screenshot shows a software interface for linguistic analysis. At the top, there is a playback control bar with buttons for play, stop, and other functions. Below this is a timeline with time markers from 00:00:14.000 to 00:00:22.000. The main area displays a tree-like structure of speech data. The 'Child' level shows several speech turns. One turn is highlighted in blue, corresponding to the clause 'and at just the moment she leaves'. An arrow from the example text above points to this highlighted segment.

Stage 3: < Types of clauses > Categorization of the clauses

Double click on the place where you wish to annotate, then click on the value chosen on the drop-down menu



< **Nominal sentence** > : annotation of non predicative expressions (do not include the clauses introduced by a presentative copula such as “it is” or “there is”)

Ex: No example in the French corpus

< **Independent** > : isolated clause, surrounded or not by connectors (between brackets)

Ex :
it looks at its watch
(then) it leaves
(and) it leaves the egg in the nest
(and) (in fact) the egg (afterwards) it shakes
(and) it turns around the nest

< **Independent with presentative copula** > : isolated clause, surrounded or not by connectors (between brackets), introduced by a presentative copula of the type “there is”, “it is”, “here”

Ex :
there is a sheep
it is a mother bird in a nest

< **Main** > : clause to which a noun or adverbial clause is attached

Ex : see following

< **Main with presentative copula** >: subordinate clause (underlined noun clause or adverbial clause) dependant on a main clause introduced by a presentative copula like “there is”, “it is”, “here” (in bold)

Ex :
There is the sheep [which wants to leave]
It is a mother bird [who knits]

< **Verb compl.** > : subordinate completive clause (underlined) dependent on the main clause verb (in bold)

Ex :
He says [I leave tomorrow]
Wallace’s owner says [you were hungry at night]
His mother tells him [to be carefull]
He wants [Marie to eat]
He asks [if Wallace will leave]
He saw [that there were many things { which had disappeared}]
He learned [to be a hunter]
She knows [that she has all the time]
I don’t know any more more [what it is]
They called some people [for them to come and see { what is happening}]

< **Sentence compl.** > : subordinate adverbial clause (underlined) dependent on a main clause (in bold)

Ex :
And afterwards [when he looks at things] **it was all eaten**
Afterwards [he had eaten so much] **he fell asleep**

I left [without him seeing]
She takes something [to bring it to her grandmother]

< **Noun compl.** > : subordinate clause (underlined) dependent on a nominal group subject or complement (in bold)

Ex :
The children [who were sleeping] heard nothing
He sees **something** [which moves]
He read **the newspaper** [where they wrote about the accident]

< **Focalised noun compl.** > : subordinate clause (underlined) dependent on a nominal group (in bold) introduced by a presentative copula

Ex :
There is **the sheep** [that wants to come out]
It is **the wolf** [that won]
It is **time** [to eat]
He saw **that there were many things** [that had disappeared]

< **Adjective complement** > : subordinate clause (underlined) dependant on an adjective (in bold)

Ex :
It is very **hard** [to verify his work]
I am **happy** [to see you]

< **Adverb complement** > : subordinate clause (underlined) dependant on an adverb (in bold)

Ex :
Luckily [we found it at last]

< **Infinitive** > : subordinate non finite adverbial or completive clause (underlined)

Ex :
He went to the river [to search for stones] (adverbial)
He sees [him go] (completive)

< **Factive** > : subordinate causative clause (underlined)

Ex :
He makes [him come down from the bed]

Note: It is considered that one deals with one and only one clause when the verb 1 in a sequence [finite verb1 + non finite verb 2] is:

- either an aspectual verb:

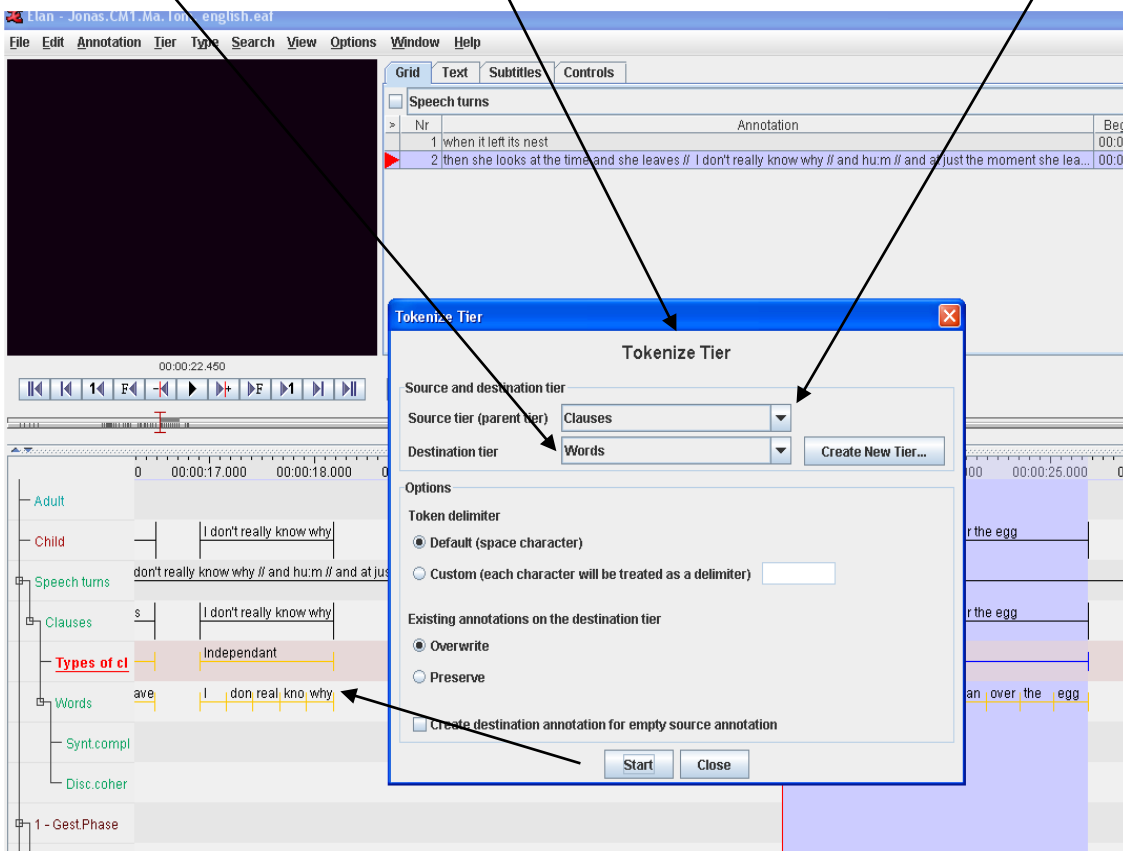
Ex :
he **is about** to leave the nest
he **begins** to bang with his beak
he **hurries** to go to grandmother's house

- or a modal verb:

Ex :
she **is allowed** to go to eat
the little boy **could** not catch the ball
the bird **wants** to destroy everything
She **had** to see her grandmother

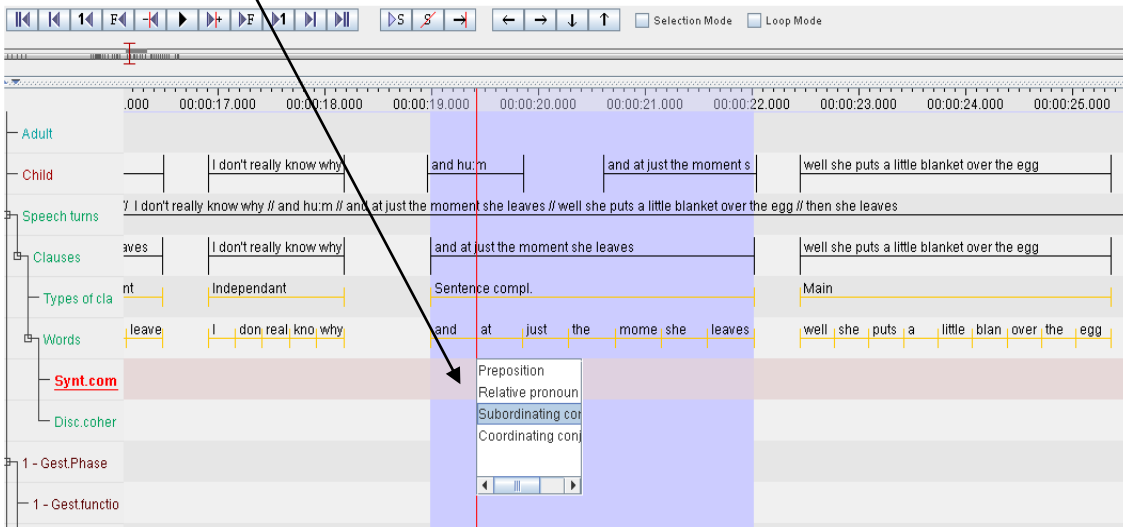
Stage 4 : < Words > Word segmentation

By using the command « tokenize tier » from the « Tier » menu. Then by defining « source tier » and « destination tier » as following :



Stage 5 : < Synt.Complex.clues >: Identification of syntactic complexity (subordination clues)

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



We annotate

< **Subordinative conjunctions** > : subordinating conjunctions such as:
that, when, like, so that, of what, because, whereas, without, all that, etc

< **Relative Pronouns** > : the relative pronouns :
who, who, where, of which, etc

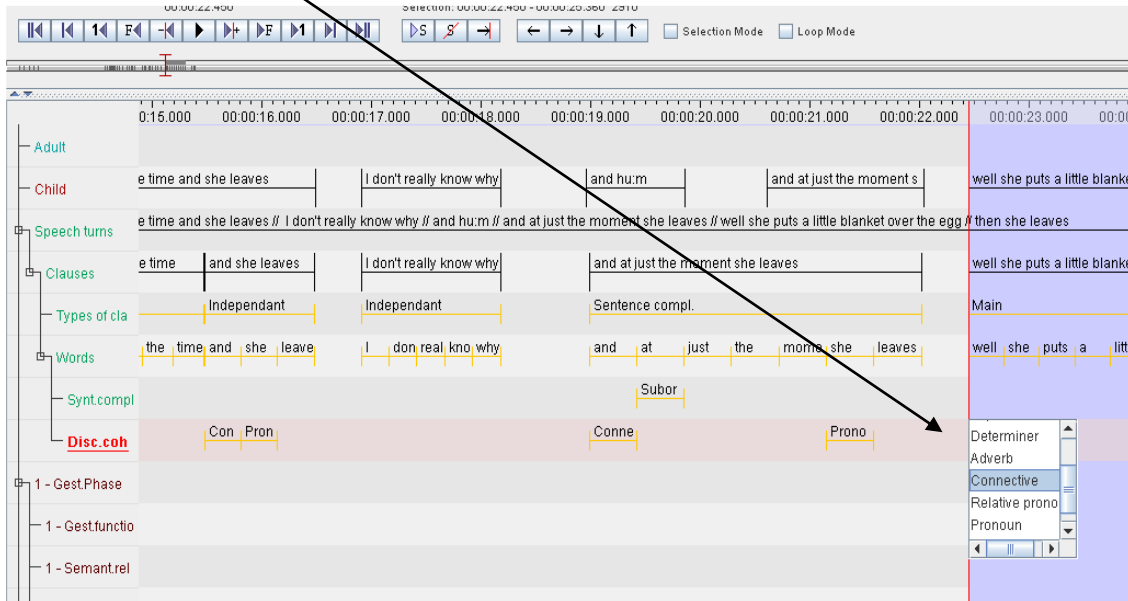
< **Prep** > : prepositions and prepositional locutions introducing an infinitive:
Ex :
to see you better
I ask you to leave
the mouse comes out in order to take it back to the nest

Note : Other subordinatives such as adverbs, adverbial phrases, etc may be annotated by leaving the annotation box empty.

Note : when the word is in two segments like “so that” or “in order to”, one annotates only at one place.

Stage 6: < Disc.Coherence.clues > identification of connectives and anaphora

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



6.1. Connectives : one annotates like < **Connective** > all the words which have a role of either marking the discourse structure, or marking logical, chronological, spatial, argumentative or enunciative relationships between clauses. See examples in the table below (extracted from Colletta, 2004).

Discourse structure markers	They allow to announce the opening or the end of a conversational unit (well, now, then, okay, so...), and to organize the discursive progression (initially, firstly, to start, secondly, in the second place, then, lately, lastly, to finish, finally...).
Logical, chronological and spatial connectives	They mark inter-clause relationships within explanatory sequences (logical connectives such as if...then, therefore, because, consequently...), narrations (chronological connectives such as and, then, before, at the same moment, afterwards, later...) and descriptions (spatial connectives such as at the top, below, under, near, on the left, on the right, further, in front, behind...)
Argumentative connectives	They mark inter-clause relationships within argumentative sequences. They mark opposition (no, on the other hand...), justification (because, since, indeed, moreover...), concession (certainly, of course, it is true that...), counter-argumentation (but, however, nevertheless...), consequence (thus, also, therefore, consequently...), summary (finally, all in all, in short, definitely...)
Enunciative connectives	They signal metadiscourse (otherwise said, I want to say, it means...)

6.2. Anaphora : one annotates all the words which have a role of reiterating a former referent. Anaphoric function (referent in bold, anaphora underlined) can be carried by:

< **Noun** > a noun or a nominal group: **the mouse**... Jerry... the mouse **Jerry**

< **Determiner** > a determiner: **a sheep**... the sheep... this sheep

< **Pronoun** > a personal pronoun : **a sheep**... it entered the house

< **Relative pronoun** > a relative pronoun: there is **a sheep** which gets off a truck
and there it sees **the plant** which had been eaten

< **Zero anaphora** > : no example in french

< **Other** > : anaphora carried by a verbal group, an adverb, a clause, etc (to be annotated by leaving annotation box empty)

Note 1: in the case of the possessive determiner like in “the bird... its mom”. One does not regard “its” as anaphora at the time of the first mention of the referent “mom”.

Note 2: when there is repetition of the co-reference in the same clause (focalisation), one only annotates the first anaphoric reference (underlined) and one ignores the second (in italics)

Ex :

Wallace... I know [that Wallace *he* adores cheese]
< Noun >

A sheep... The sheep, *it* is eating the leaves
< Det >

The bird... it pecks [all that it finds, *the bird*]
Pronoun >

Note 3 : when one annotates the files corresponding to the explanations, one annotates as anaphora the first mention of a referent if and only if this referent was mentioned explicitly in the question or the prompt of the adult..

Ex :

Adult: why was the **baby bird** glad to see the mouse?

Child: because it believes that it is its mom
< Pronoun >

3. Narrative annotation

Stage 1: < Narrative > resumption of the segmentation of the child's clauses

It is enough to copy the annotations already recorded at stage 2.

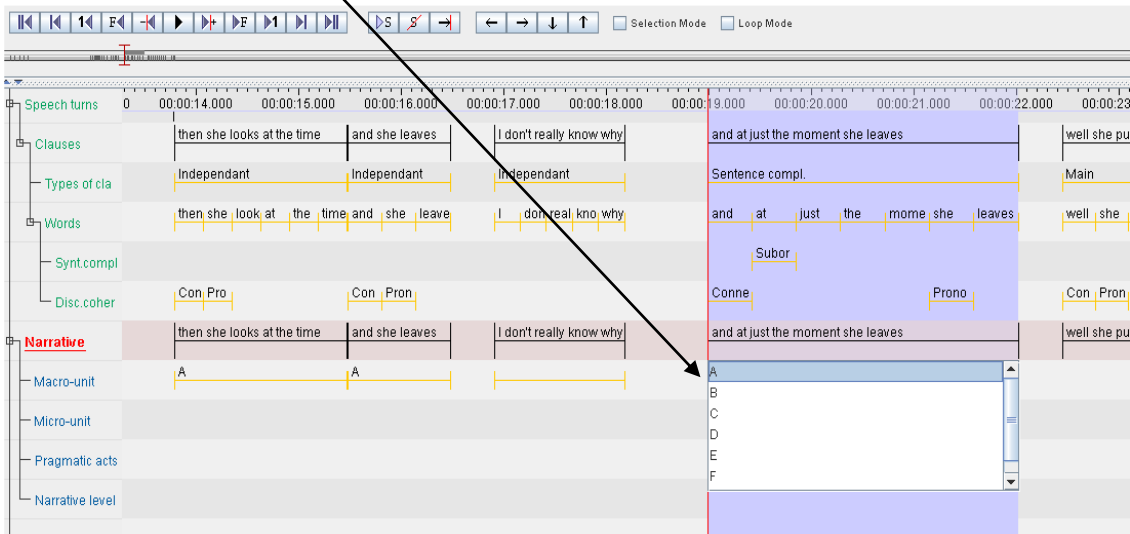
The screenshot displays a software interface for multimodal annotation. At the top, there is a control bar with playback icons (play, stop, previous, next, etc.) and checkboxes for 'Selection Mode' and 'Loop Mode'. Below this is a timeline with time markers from 00:00:16.000 to 00:00:25.000. The main area is divided into several horizontal tracks:

- Adult:** A grey track at the top.
- Child:** A track containing the text: "me and she leaves | I don't really know why | and hum | and at just the moment s | well she puts a little blanket over the egg".
- Speech turns:** A track with a single line: "me and she leaves // I don't really know why // and hum // and at just the moment she leaves // well she puts a little blanket over the egg // then she leaves".
- Clauses:** A track showing segment boundaries for the child's speech.
- Types of cla:** A track with labels: "Independant", "Independant", "Sentence compl.", "Main".
- Words:** A track with individual words: "e", "time", "and", "she", "leave", "I", "don", "real", "kno", "why", "and", "at", "just", "the", "mome", "she", "leaves", "well", "she", "puts", "a", "litle", "blan", "over", "the", "egg".
- Synt compl:** A track with labels: "Subor".
- Disc.coher:** A track with labels: "Con", "Pron", "Conne", "Prono", "Con", "Pron", "Dete".
- Narrative:** A track with labels: "me", "and she leaves", "I don't really know why", "and at just the moment she leaves".
- Macro-unit:** A track with a blue shaded area.
- Micro-unit:** A track with a blue shaded area.

A vertical red line is positioned at approximately 00:00:23.000. A black arrow points downwards from the 'Types of cla' track to the 'Narrative' track at this position.

Stage 2: < Macro-unit > categorization of the clauses in macro-episodes

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



List of macro-episodes :

Episode code	Episode description
A	In the nest
B	From nest to bed
C	The hatching
D	“Imprinting”
E	Damage
F	How to calm the baby bird
G	Back to the nest

Note 1: Several clauses can be assigned to a macro-episode, and conversely, it can happen that a macro-episode is not the subject of any clause.

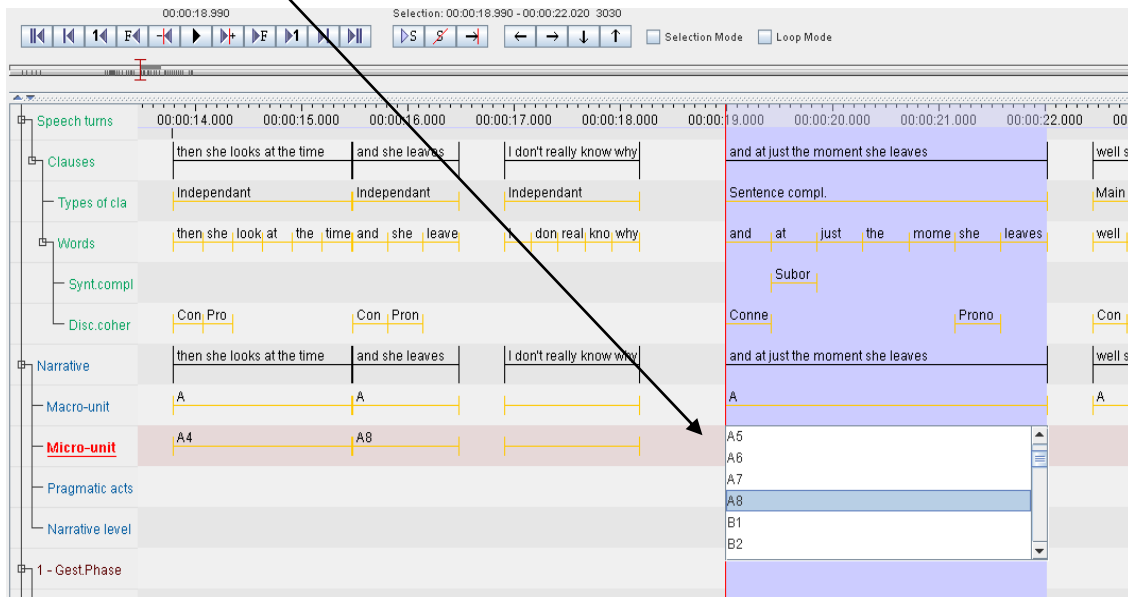
Note 2: when the words of the child do not correspond to any identified macro-episode: the child evokes events out of the history (e.g. hereafter), explains, comments on or interprets (cf. stage 4), one leaves the annotation empty while clicking outside the drop-down menu.

Ex :
“I don’t really know why”

(See above annotation illustration)

Stage 3: < Micro-unit > categorization of the clauses in micro-episodes

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



List of micro-episodes :

Code	Description of micro-episode
A1	The mother knits
A2	The mother looks at the egg
A3	The mother knits
A4	The mother looks at the time
A5	The mother puts down her knitting
A6	The mother tucks in the egg
A7	The mother looks at the egg
A8	The mother leaves
B1	The egg jumps about
B2	The egg falls on a cobweb
B3	The cobweb breaks
B4	The egg falls on a flower
B5	The flower drops the egg on a leaf
B6	The egg rolls from the leaf to the house
B7	The egg pushes the door open
B8	The egg rolls up until it reaches the bed
C1	The mouse turns on top of the egg
C2	The egg wakes the mouse
C3	The mouse discovers the egg
C4	The egg makes the mouse fall from the bed
D1	The egg cracks
D2	The baby bird runs with its shell on the head
D3	The mouse removes the shell
D4	The baby bird runs in circles
D5	The baby bird thinks the mouse is its mother
D6	The baby bird hugs the mouse
D7	The mouse pats the head of the baby bird
E1	The baby bird sees something
E2	The baby bird runs and climbs on the chest of drawers
E3	The baby bird attacks the drawers with its beak
E4	The baby bird destroys the lampshade
E5	The mouse wants to catch the baby and gets knocked on the head
E6	The bird makes a hole on the wall
E7	The mouse holds the bird by its beak and vibrates

Projet ANR Multimodalité

ANR-05-BLANC-0178-01 et -02

E8	The mouse places the bird
F1	The mouse has an idea
F2	The mouse searches for something to eat
F3	The mouse holds out a morsel of food
F4	The baby bird eats
F5	The mouse hands another morsel of food
F6	The baby bird eats the morsel of food as well as the mouse's arm
F7	The mouse shakes himself free
F8	The bird gets stuck on the floor
F9	The mouse pulls the bird free
F10	The mouse wipes its forehead and prepares to sit down
F11	The baby bird destroys the stool and the mouse falls
G1	The mouse looks at the bird angrily
G2	The mouse takes the bird in his arms
G3	The mouse takes the bird outside
G4	The mouse looks up, he searches by turning his head right then left
G5	The mouse sees something and smiles
G6	The mouse climbs on the tree until reaching the nest
G7	The mouse places the bird inside
G8	The mouse waves goodbye
G9	The mouse leaves

Note 1: several clauses can be assigned to a micro-episode, and conversely, it can happen that a micro-episode is not the subject of any clause. When the words of the child do not correspond to any identified micro-episode: the child evokes events out of the history, explains, comments on or interprets (cf. stage 4), one leaves the annotation empty by clicking outside the drop-down menu.

Ex :

“Well it is woodpecker I mean a mother woodpecker who makes an egg”

Note 2: when the child's words correspond to a micro-episode identified without using word for word the formulation suggested, the corresponding micro-episode is all the same selected.

Ex :

“well in fact at the start a bird knits”

< A1 > : The mother knits

“after it (the egg) trembles”

< B1 > : The egg jumps about

“and then it (the egg) turned around the nest”

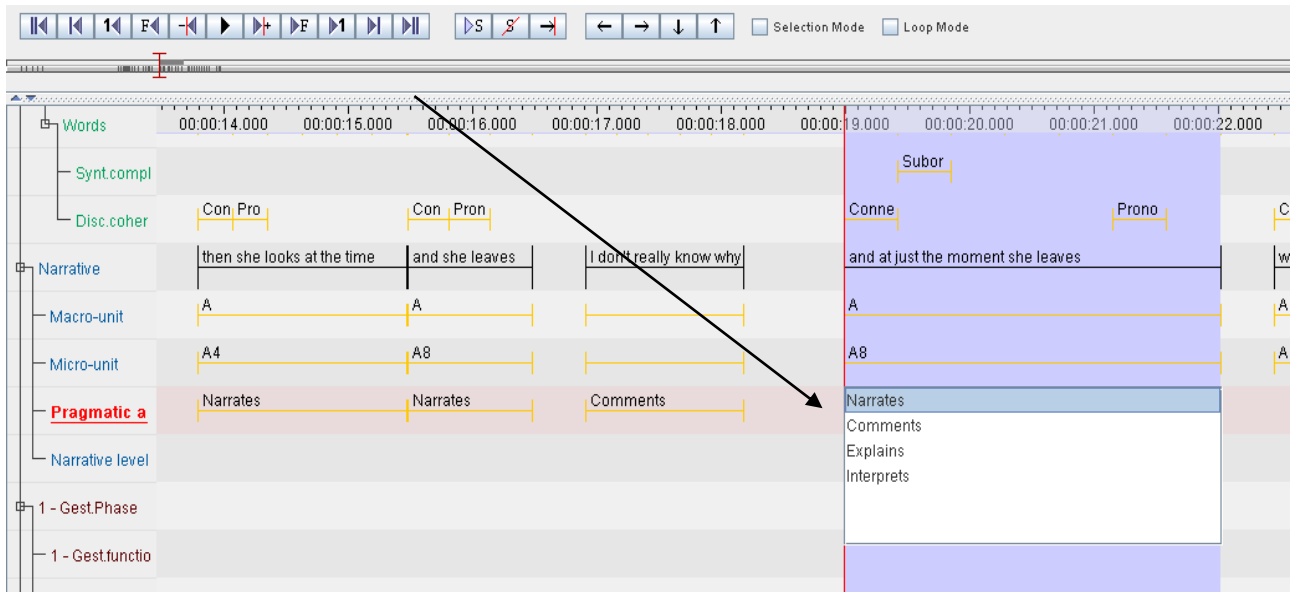
< B1 > : The egg jumps about

“and it slips to a flower”

< B5 > : The flower drops the egg on a leaf..

Stage 4: < Pragmatic acts > categorization of the clauses as expressing speech acts

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



Select :

< **narrates** > when the clause takes the description of a micro-episode or states the explicit dimension of this micro-episode: the child tells the event such as it appears in the cartoon.

Thus: any clause having been identified at stage 3 as corresponding with a micro-episode is to be annotated with < **narrates** >

< **explains** > when the clause imports a precision of a causal nature: the child includes a supplementary explanation to the narrated event such as it appears in the cartoon.

Ex:
(then afterwards he tries to sit down) **because he (Jerry) is tired**
(he takes it back to his nest) **because it's breaking everything**

< **interprets** > when the clause presents an inference or an interpretation concerning the situation or the intentions of the characters: the child invents from the event, makes some hypothesis...

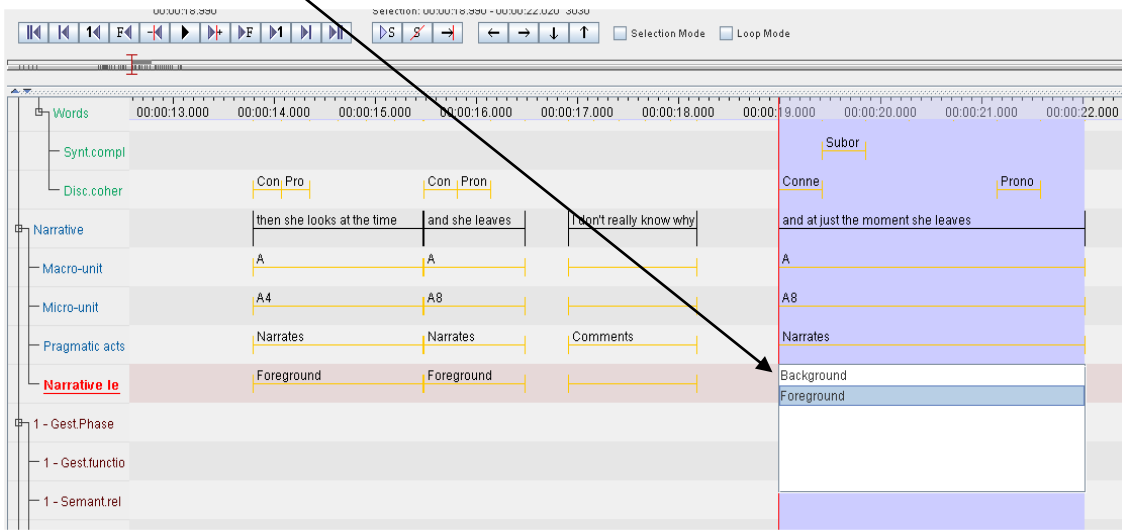
Ex:
(then it looks at its alarm clock) **it realizes {that it is the hour [to leave]}**
>>> 3 clauses to be annotated with < **interpret** >

< **comments** > when the clause deals with neither the explicit aspects, nor the implicit aspects of the course of the events but presents a "meta-narrative comment" relating to a character, an action or any aspect of the story, or a "para-narrative comment" relating to the action of telling the history (judgement, personal appreciation...)

Ex:
it is a crazy bird
I like [when the egg falls into the spider web] >>> 2 clauses to be annotated with < **comments** >

Stage 5: < Narrative level > categorization of the clauses as expressing foreground vs background of the story

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



Select :

< **Foreground** > the content of the clause describes the course of the events such as they appear in the cartoon.

Ex:

then it looks at its alarm clock

< **Background** > the content of the clause gives information on the the background of the events: the beginning (micro-units A1, A2 and A3 mainly), the end (micro-units G8 and G9 mainly), or describes characters or places.

Ex :

well, at the beginning there is a bird knitting

Note: Two options:

1. the child recounts the events using the present as the linguistic tense: the change from background to foreground is marked by the use of a connective introducing a new event (suddenly, and then)
or:
2. the child is using the past as linguistic tense: the change from background to foreground is marked by the tense that is used: imperfect for the background, simple past tense (or preterit) for the foreground

We leave the annotation empty when the clause is annotated with < comments > at stage 4, since the child is no longer telling explicit or implicit aspects of the story.

4. Annotation of Explanations

Stage 1: < Answer explanation > partial resumption of the segmentation of the child's clauses

After each question or a request for an explanation by the adult, you need to make a brief annotation which indicates if there is or not an answer by the child.

Select < 0 > on the drop-down menu if there is no response

Select < 1 > on the drop-down menu if there is a response from the child.

Track	00:00:13.000	00:00:14.000	00:00:15.000	00:00:16.000	00:00:17.000	00:00:18.000	00:00:19.000	00:00:20.000	00:00:21.000
Synt.compl									
Disc.coher		Con, Pro		Con, Pron			Conne		
Narrative		then she looks at the time		and she leaves		I don't really know why		and at just the moment she leaves	
Macro-unit		A		A				A	
Micro-unit		A4		A8				A8	
Pragmatic acts		Narrates		Narrates		Comments		Narrates	
Narrative level		Foreground		Foreground				Foreground	
Answer expla									

5. Gesture Transcription

It is carried out in parallel by two independent coders 1 and 2, who annotate each the various stages:

The screenshot displays the ELAN software interface for the file 'Elan - Jonas.CM1.Ma.Tom.english.eaf'. The main window shows a transcription grid with the following content:

Level	Text	Start Time	End Time
Narrative	I don't really know why	00:00:17.000	00:00:18.000
Macro-unit	A	00:00:19.000	00:00:20.000
Micro-unit	A8	00:00:20.000	00:00:21.000
Pragmatic acts	Comments	00:00:17.000	00:00:18.000
Narrative level	Comments	00:00:17.000	00:00:18.000
Narrative	and at just the moment she leaves	00:00:21.000	00:00:22.000
Macro-unit	A	00:00:23.000	00:00:24.000
Micro-unit	A6	00:00:24.000	00:00:25.000
Pragmatic acts	Narrates	00:00:21.000	00:00:22.000
Narrative level	Foreground	00:00:21.000	00:00:22.000
Narrative	well she puts a little blanket over the egg	00:00:25.000	00:00:26.000

Below the grid, two coders are shown with their respective annotations:

- coder 1** (red annotations):
 - 1 - Gest.Phase
 - 1 - Gest.functio
 - 1 - Semant.rel
 - 1 - Synchron.r
 - 1 - Gest.for
- coder 2** (green annotations):
 - 2 - Gest.Phase
 - 2 - Gest.functio
 - 2 - Semant.rel
 - 2 - Synchron.r

The annotations are linked to specific time points in the transcription grid. For example, 'coder 1' has a 'Prep' annotation at 00:00:21.000 and a 'Stroke' annotation at 00:00:22.000. 'coder 2' has a 'Prep' annotation at 00:00:23.000 and a 'Stroke' annotation at 00:00:24.000. The grid also shows other annotations like 'Representational', 'Integrates', and 'Anticipates'.

For each of the following stages, there will be corresponding examples of the options of the roll-down menus in the file *ELAN* “Jonas.CM1.Ma.Tom.eaf”.

One opens this file on *ELAN* with the corresponding audio and video files which are appended to the present document in file “ANR Coding Manual”.

Stage 1: < Gest.Phase > identification of gestures and annotation of the gesture phases

1.1. Identification of the gesture units

To identify the gesture units that it is on the point of annotating, the coder takes into account the three following criteria, to which it allows a value between 0 and 2:

If the **movement** is:

- Easy to perceive, of good amplitude, marked well by its speed 2
- not easy to perceive, of small amplitude, not marked by its speed 0
- between the two 1

If **location** is :

- in frontal space of locutor, for interlocutor 2
- on a side, little or not locatable by the interlocutor 0
- between the two 1

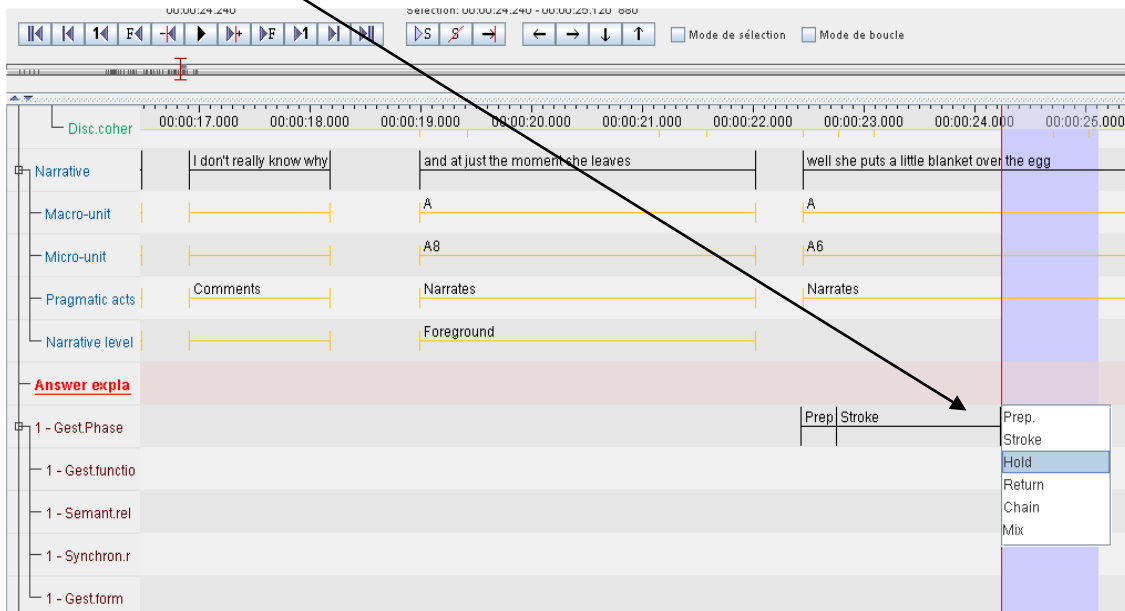
If the **configuration** (in the case of a manual gesture):

- corresponds to a precise shape hand or a well marked trajectory 2
- corresponds to an imprecise form or trajectory 0
- between the two 1

One identifies the movement as a gesture if the sum of the allotted values is > 3

1.2. Annotation of the gesture phases

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



One selects one of the six following values (see examples in A. Kendon, 2004, chap.7) :

< **stroke** > = the gesture itself, which is a hand gesture, or a movement of the head, shoulders or bust.

Note: every stroke corresponds to a gesture: the number of strokes which one annotated must thus correspond to the number of gestures which one identified in the sequence.

Projet ANR Multimodalité

ANR-05-BLANC-0178-01 et -02

< **prep** > = the movement which precedes a hand gesture stroke, which takes the hand(s) from its (their) initial position (at place of rest) to where the gesture begins.

< **return** > = the movement which brings back the hand(s) from its (their) position at the end of a hand gesture stroke to a rest position, identical or not to the preceding one.

< **chain** > = the movement which brings the hand(s) from its (their) initial position at the end of a hand gesture stroke to the place where a new stroke begins, without returning to a rest position between the two strokes.

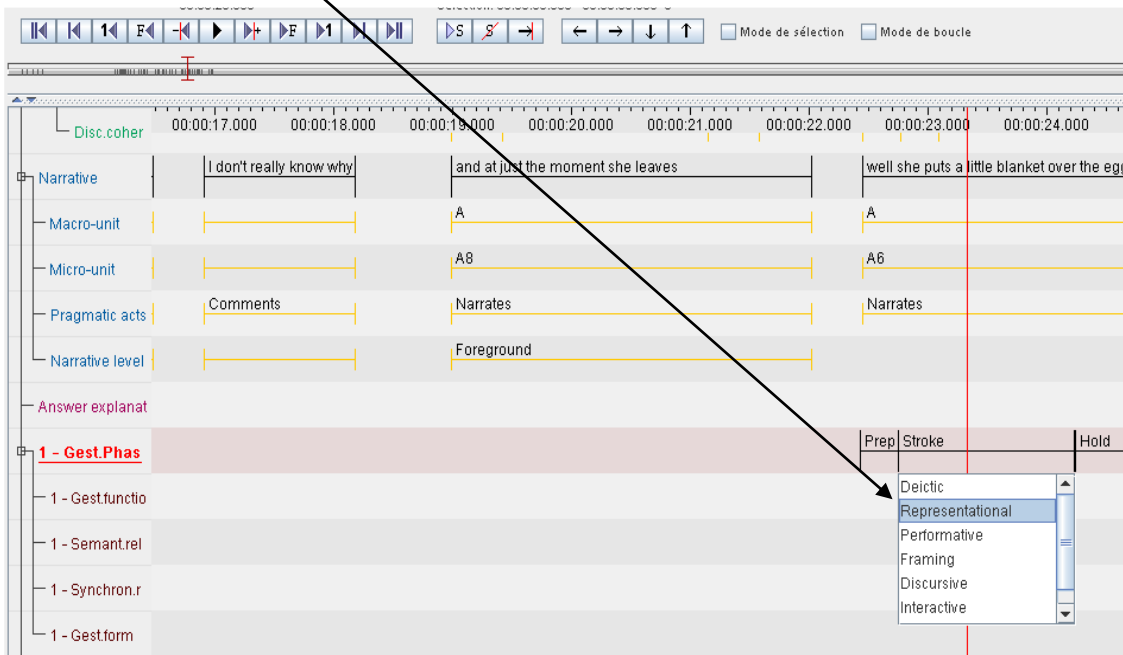
< **hold** > = the maintaining of the hand(s) in its (their) position at the end of a hand gesture stroke, before the returning phase or a chained gesture.

< **mix** > = we do not use this annotation.

Note : contrary to hands, the position of head, the bust or shoulders is fixed. These movements can therefore not be “prepared” as hand movements and consequently can only be annotated as “strokes”.

Stage 2 : < Gest.function> attributing function to gesture

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



Select:

< **Deictic** > = hand or head gesture pointing to an object present in the communication setting, or to the interlocutor, or to oneself or a part of the body, or indicating the direction in which the referent is found from the actual coordinates of the physical setting.

Ex :

- The locutor points to himself while saying « this is what I understood »

Note : not all pointing gestures have a deictic function. A deictic pointing gesture strictly implies the presence of the referent or its location from the actual physical setting, and these gestures are rare in a corpus of spoken narratives. When the locuteur points while speaking of a character, an object or an internal localisation of the story, the gesture does not have a deictic function but a representational function (or a discursive function in the case of an anaphoric use of gesture).

Ex :

- The speaker points ahead of himself and upwards, while saying: “Jerry climbs on top of the tree”

< **Representational** > = hand or facial gesture, associated or not to other parts of the body, which represents an object or a property of this object, a place, a trajectory, an action, a character or an attitude, or which symbolises, by metaphor or metonymy, an abstract idea.

Examples of gestures representing objects, properties, places, trajectories, actions, characters from the concrete world :

- 2 hands drawing an oval form to represent the egg
- 2 hands drawing the form of a container to represent the nest
- Rapid movement of the hand or index high then low to represent the fall of the egg
- Hand or head movement, in the direction to the right, to the left, high or below to represent the trajectory of an object or a character
- Rapid or repeated hand movements in a picking form to represent the woodpecker attacking an object
- Arms and hands mimicking carrying an object to represent Jerry when he takes the bird to the nest
- Rapid sagging movement of the body to represent Jerry falling down
- Movement of the head + gaze above to represent Jerry searching for the bird's nest
- ...

Examples of gestures symbolising abstract ideas :

- Hand or head gesture pointing to a spot that represents a character (the bird, Jerry) or an object (the nest, furniture)
- Movement of the hand towards the left to symbolise « before », the past or the perfect, or towards the right to symbolise « after », the future or the imperfect.
- Movement of both hands flat, palms towards the top, to express the idea of wholeness.
- Head gesture of negation to express ignorance or the incapacity of the character
- Gesture of the hand and shoulders to express helplessness, the inability of a character to do something
- ...

< **Performative** > = gesture which allows the gestural realisation of a non assertive speech act (response, question, request for confirmation, etc.), or which reinforces or modifies the illocutionary value of a non assertive speech act.

Example of gestures which accomplish a speech act:

- Nodding head for an affirmative response
- Hand or head gesture for a negative response
- Shrugging, associated or not with a doubtful mimic, to express ignorance as an answer to a question
- ...

Examples of gestures reinforcing the function of the act expressed verbally:

- Vigorous head nodding accompanying an affirmative response
- Vigorous head shaking gestures accompanying a negative response
- ...

Examples of gestures modifying the function of the act expressed verbally:

- When the gesture or the mimic contradicts speech : not seen in Grenoble corpus
- ...

< **Framing** > = gesture occurring during narration (during the telling of an event, or commenting an aspect of the story, or commenting the narration itself) and which expresses an emotional or mental state of the speaker.

Ex :

- Face showing amusement to express the comical side of a situation
- Shrugging or facial expression of doubt to express incertitude of what is being asserted
- Shrugging or facial expression to express the obviousness of what is being asserted
- Using « finger inverted commas » to express distance in relation to terms used
- Frowning and staring above to express reflection while trying to recall the story or the next event
- ...

< **Discursive** > = gestures generally brief which aid in structuring speech and discourse by the accentuation or highlighting of certain linguistic units, or which mark discourse cohesion by linking clauses or discourse units with the help of anaphoric gestures or gestures accompanying connectives.

Examples of accentuating or highlighting gestures:

- Rhythmic movements (beats) of the head or hands accompanying the accentuation of certain words or syllables
- Raising of eyebrows accompanying the accentuation of certain words or syllables

Examples of segmentation or demarcation gestures:

- Rapid movement of the hand sketching the gesture of hunting/ chasing something to signify changing an episode, when coming back to the narrative after a commentary or vice versa

Examples of gestures of discourse cohesion

- Hand sketching the form of a content to symbolise the topic or the title of the story
- Hand sketching the form of a content to symbolise an episode of a story
- Hand or head pointing gesture with an anaphoric function : pointing to a spot in the frontal space to refer to a character or an object previously referred and assigned to this spot)
- Brief hand gesture or beat accompanying a connective
- ...

< **Interactive** > = gesture accompanied by gaze towards the interlocutor to express that the speaker requires or verifies his attention, or shows that he has reached the end of his speech turn or his narrative, or towards the speaker to show his own attention.

Ex :

- Rapid hand or head movement, including a gaze towards the interlocutor in quest for his attention
- Nodding head while interlocutor speaks
- Orienting the head and gaze towards the interlocutor at the end of speech turn or narrative.
- ...

< **Word Searching** > = Hand gesture or facial expression which indicates that the speaker is searching for a word or expression.

Ex :

- Frowning and staring above while searching words

Projet ANR Multimodalité

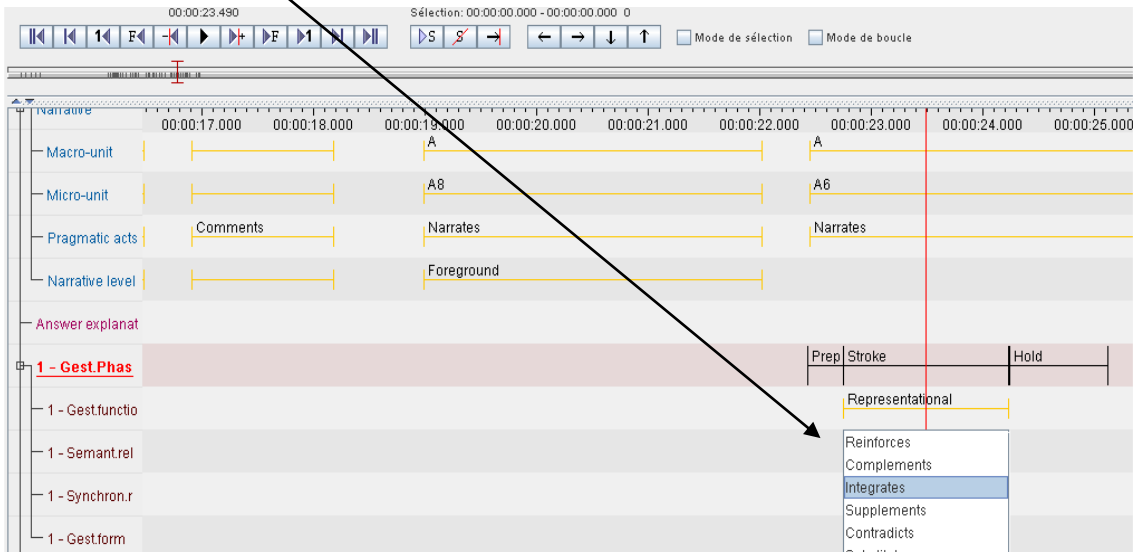
ANR-05-BLANC-0178-01 et -02

- tapping fingers, with or without a mimic of reflection, while searching words

Note: If the gesture appears difficult to categorise, if it appears to fill two or many functions at the same time, we can annotate it as **<mixed>** by leaving the annotation empty. But it is preferable to select one function: the function that appears dominant.

Stage 3 : < Semant.relation> definition of the relation of the gesture to corresponding speech

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



Select:

< **Reinforces** > = the information brought by the gesture is identical to the linguistic information it is in relation with.

Ex :

- Nodding head accompanied by a « yes » of an affirmative
- Shrugging accompanied by a « I dont know » or a response full of doubt
- A deictic pointing gesture towards an object explicitly named

Note : this annotation does not concern the < representational > gestures, as the information brought by the gesture always says more than the linguistic information.

< **Complements** > = The information provided by the gesture brings a necessary complement to the incomplete linguistic information provided by the verbal message: the gesture disambiguates the message.

Ex :

- Pointing gesture accompanying a location adverb like « here », « there »
- Pointing gesture aiming at identifying an object not explicitly named

Note : this annotation only concerns the < deictic > gestures.

< **Integrates** > = the information provided by the gesture does not add information to the verbal message, but makes it more precise.

Ex :

- « she leaves »
***** : shifting of the left hand towards the left side, indicating the direction of the displacement.
- « the egg moves »
***** : oscillation of the hand representing the vibrations of the egg
- « it makes the mouse move »
***** : oscillation of the hand representing the vibrations of Jerry.

Note : this annotation only concerns the < representational > gestures.

< **Supplements** > = the information brought by the gesture not only serves to specify the linguistic information that is in relation with, but also adds a supplementary signification.

Examples of representational gestures providing a supplementary signification:

- « he tries to come out »
***** : vertical agitation of the hand to represent the baby bird moving inside the egg
- « the egg jumps »
***** : oscillation of the hand which in addition, shifts towards the bottom.

...

Examples of performative gestures providing a supplementary meaning:

- Vigorous nodding accompanying an affirmative
- Vigorous shaking of head accompanying a negative response

...

Examples of framing gestures providing a supplementary meaning:

- Face showing amusement signs to express a comical side of the narrated event
- Face showing disgust to express a displeasing action
- Shrugging or showing a mimic of doubt to express incertitude of what has been asserted

...

Note : all < framing > gestures are annotated with < supplements >, unless if they contradict the verbal message (cf. following annotation)

< **Contradicts** > = The information provided by the gestures is not only different from the linguistic information in which it is linked but contradicts it.

Ex :

When the gesture or mimic contradicts speech : not seen in Grenoble corpus

Note : this annotation normally concerns only the < framing > and < performative > gestures.

< **Substitutes** > = The information provided by the gesture replaces linguistic information.

Ex :

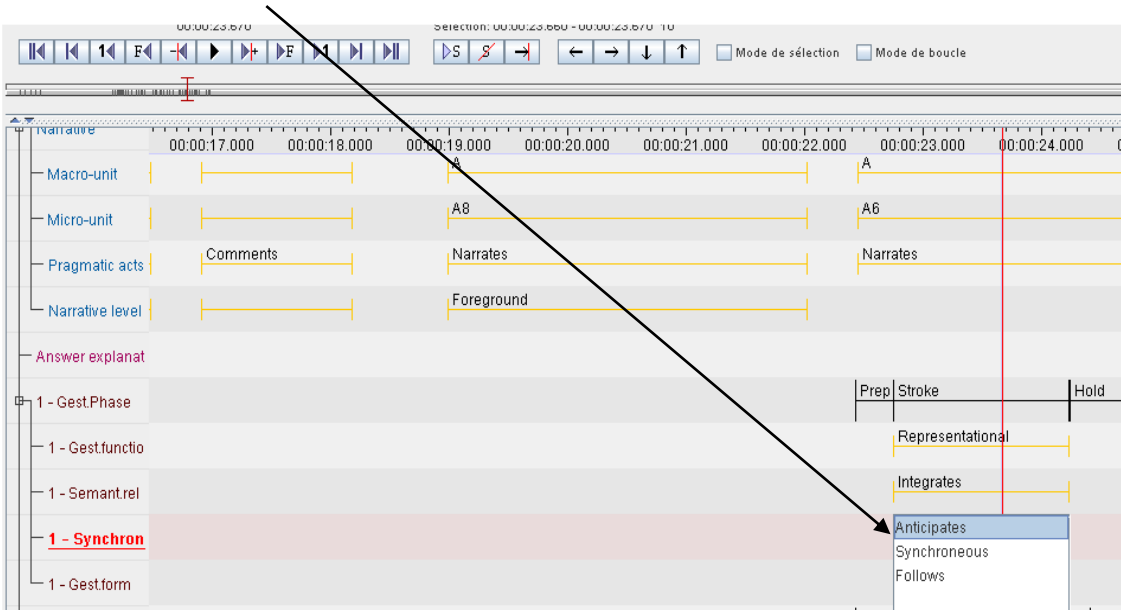
Nodding in affirmative response

Shrugging and mimic showing ignorance as a response expressing doubt

Pointing gesture aimed to identify an object in the absence of speech

Stage 4 : < Synchron.relation > indication of the temporal placement of the gesture in relation to the corresponding speech

Double click on the place where you wish to annotate, then click on the value chosen in the drop-down menu:



Select :

< **Synchronous** > = The stroke begins at the same time as the corresponding speech segment, whether it is a syllable, a word (noun, verb, adjective, connective...) or a group of words (the notation **** corresponds to a gesture hold).

Ex :

She leaves

< **Anticipates** > = The stroke begins before the corresponding speech segment : the speaker starts his gesture while delivering a linguistic information prior to the one corresponding to it.

Ex :

Errrrr _ - this this made it jump everywhere

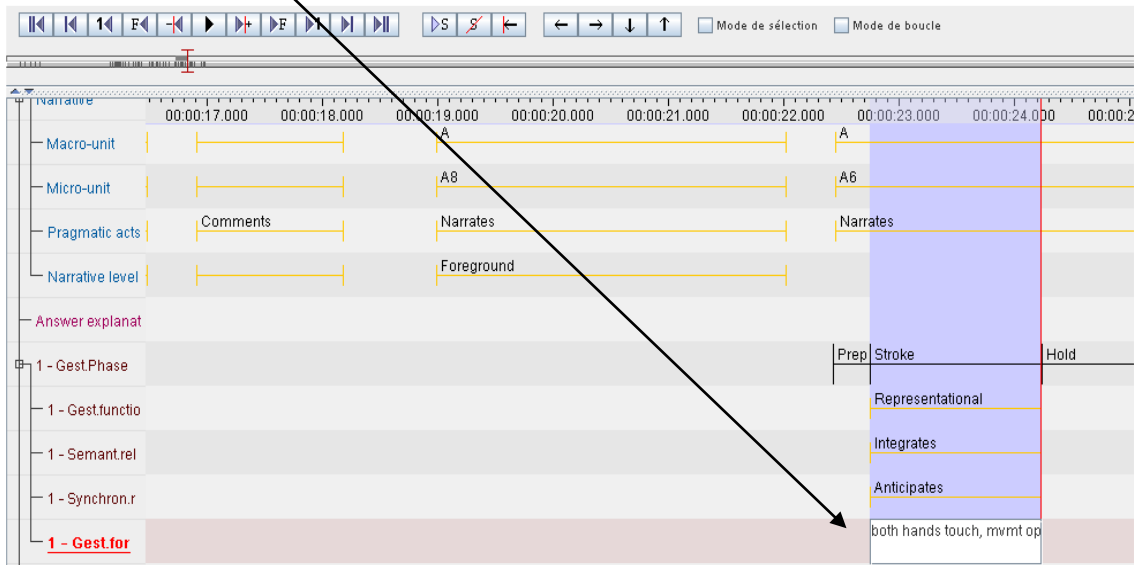
< **Follows** > = The stroke begins after the corresponding speech segment: the speaker begins his gesture after having finished speaking, or while delivering a linguistic information posterior to the one corresponding to it.

Ex :

It falls - it goes on top of a spiderweb

Stage 5 : < Gest.form >

Double click on the place where you wish to annotate, then type the information you wish to input in the block:



We give a brief description of the annotated movement sticking to its most salient points:

- body part of movement: head, chest, shoulders, 2 hands, left hand, right hand, index, eyebrows, mouth....
- if there is a trajectory: direction of the movement (towards the top, bottom, left, right, frontal, behind....)
- if there is a hand shape: the form of the hand (flat, cutting, closed in a punch-like form, curved, palm up, palm down, fingers pinched, fingers in a circle....)
- the movement itself: head nod, beat, circular gesture, rapid or not, repeated or not...

References

1. Transcription conventions adapted from *VALIBEL* :

<http://valibel.fltr.ucl.ac.be/>

2. Linguistic annotations (définition of the clause, categorisation of clauses, connectives and anaphora) are based on:

- Berman, R.A. & Slobin, D.I. (1994). *Relating events in narrative : A crosslinguistic developmental study*. Hillsdale, NJ : Lawrence Erlbaum Associates.
- Jisa, H. & Kern, S. (1998). Relative clauses in French children's narrative texts. *Journal of Child Language*, 25, 623-652.
- Colletta, J.-M. (2004). *Le développement de la parole chez l'enfant âgé de 6 à 11 ans. Corps, langage et cognition*. Hayen, Mardaga.
- Diessel, H. (2004). *The acquisition of complex sentences*. Cambridge : Cambridge University Press.

3. Narrative annotation (episodes, narrative levels, pragmatic acts) are based on:

- Labov, W. (1978). *Le parler ordinaire*. Paris, Minuit.
- Berman, R.A. & Slobin, D.I. (1994). *Relating events in narrative : A crosslinguistic developmental study*. Hillsdale, NJ : Lawrence Erlbaum Associates.
- Laforest, M., Dir. (1996). *Autour de la narration*. Laval, Québec, Nuit Blanche Editeur.

4. Gesture transcription (phases, functions, gesture-speech relationships) are based on:

- Kendon, A. (2004). *Gesture. Visible action as utterance*. Cambridge. Cambridge University Press.