Quick Start Guide

The Observer XT

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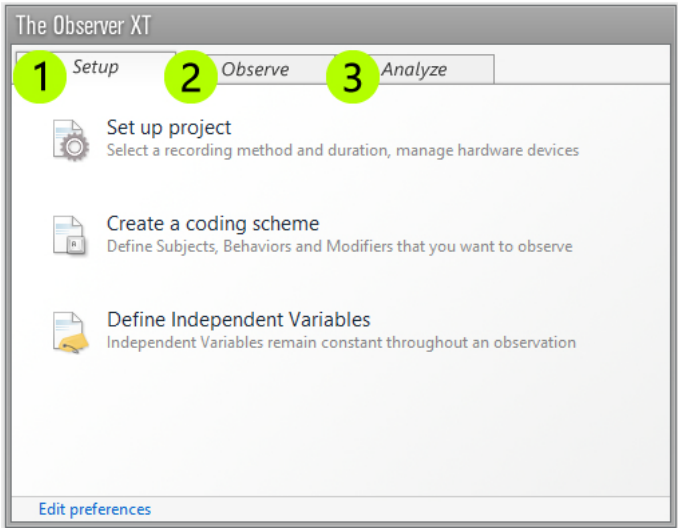
Up and running quickly

Working with The Observer XT consists of three main steps. These three steps are visible in the main window of The Observer XT that opens once you have created a project (page 6). In step 1 you create all the necessary settings for your observations (page 6). In step 2 you collect your data (page 13). And in step 3 you analyze your data (page 17).

The Observer XT in three steps

1. Define all settings
2. Acquire your data
3. Analyze your data



This Quick Start Guide guides you through these main steps. Only the most basic features of The Observer XT are addressed. Inevitably, some features that may be vital to your application are not discussed. You find additional information in The Observer XT Help. Press **F1** in The Observer XT to open it.

Video tutorial

To get you going, you can also watch the video tutorial. You can open this tutorial within The Observer XT. Choose **Help** > **Video Tutorial**.

Support

If you encounter problems, from the **Help** menu select **Noldus Online** > **Get Support**. You will be directed to MyNoldus. Log in with your MyNoldus username and password. Select **Support**.

Install and start The Observer XT

To install The Observer XT

1. Download the Observer installation zip file via your MyNoldus account: click on **Downloads** and then **Versions**.

   Browse to my.noldus.com if you do not have a MyNoldus account yet.

2. Unzip the zip file and double-click the file The Observer XT 17 Setup.exe.

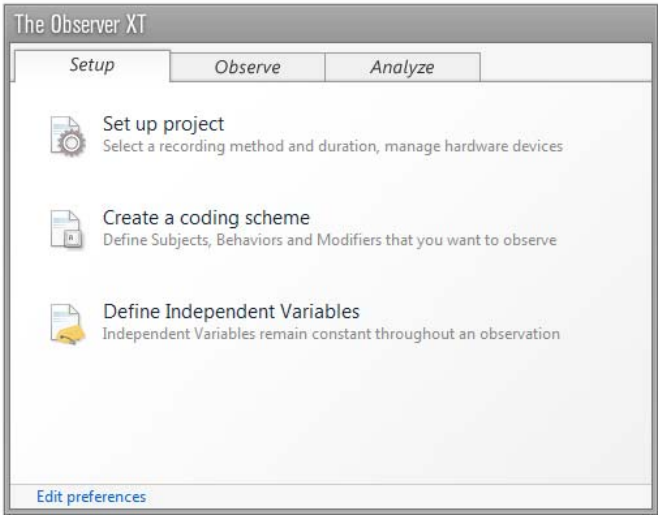
3. Under Installation type, select **Standard.**

4. Follow the rest of the instructions on your screen to install The Observer XT.

5. Dependent on your license, do one of the following:

- If you have a software activation code, start The Observer XT and activate your license. You can choose between a Floating or a Fixed activation.
  - **Floating** — Choose Floating if you want to be flexible on which computer you use The Observer XT and your computer is connected to the internet.
  - **Fixed** — A Fixed activation is linked to one computer. You can activate your license online (if the computer has an internet connection) or offline by scanning a QR code with your smartphone. After you have activated the license you can use The Observer XT without internet.
- If you have a hardware key, insert it into the computer and open The Observer XT.

Step 1 - Create all settings



CREATE A NEW PROJECT

To create a new project, choose **File** > **New Project**. Then:

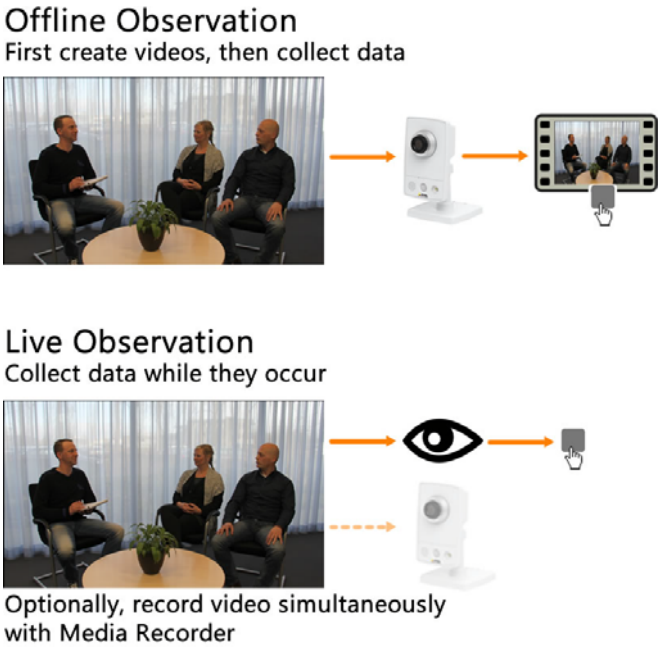
1. Create settings for your project (see below).
2. Make your Coding Scheme with relevant codes for your research question (page 8).
3. Define Independent Variables, which are factors that remain constant throughout one observation, like temperature, or gender and age of your test participants (page 12).

CREATE SETTINGS

To specify how to observe and code your videos, choose **Setup** > **Project Setup.**

Observation source

Under **Observation source**, choose whether you want to observe offline from a video file, or carry out the observation live while the behaviors occur. If you carry out a live observation, you can use MediaRecorder to simultaneously create a video file.



Observation method

Under **Observation method**, choose **Continuous sampling**. You get a full record of the absolute durations and frequencies of behaviors.

Select one of the other options if you want to score at regular time intervals. You will then get frequencies of behaviors, not durations.

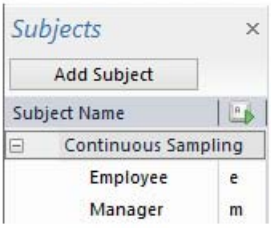
CREATE A CODING SCHEME

Create your Coding Scheme in such a way that you can answer your research questions with the annotations. Coding can be a time-consuming process. Therefore, it is important to only define the factors that are really needed for your research.

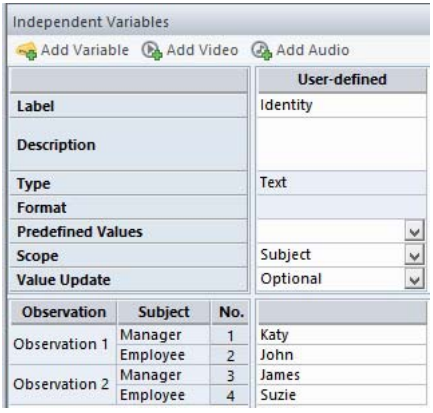
Subjects

If you study only one person or animal in each observation, do not define subjects in the Coding Scheme. Enter their identity in the Independent Variables list (see page 12).

If you study multiple persons or animals in one observation, enter their *roles* as subjects.

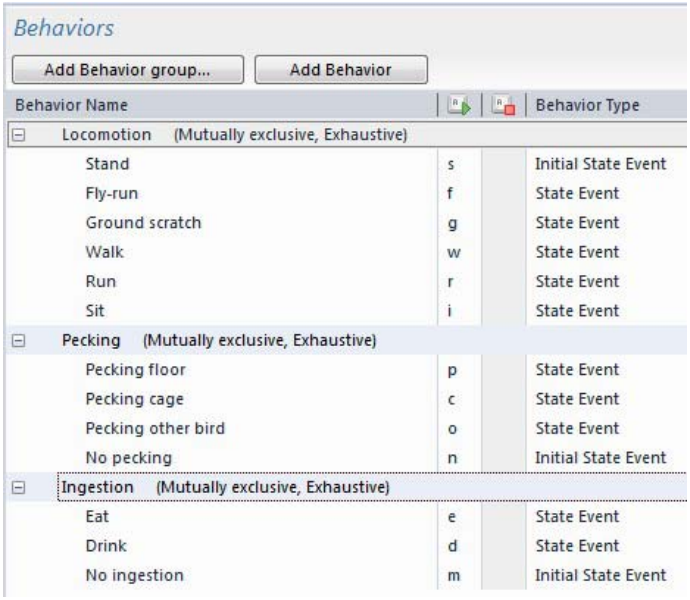


Enter their *identity* in the Independent Variables list (see page 12).



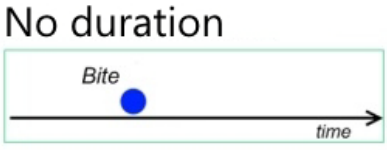
Behaviors

Define the behaviors that are relevant for your research question and the key codes with which you want to score their occurrence during the observations. Create behavior groups, like in the example below *Locomotion*, *Pecking* and *Ingestion*, and define the individual behaviors within the groups.



Behaviors with and without duration

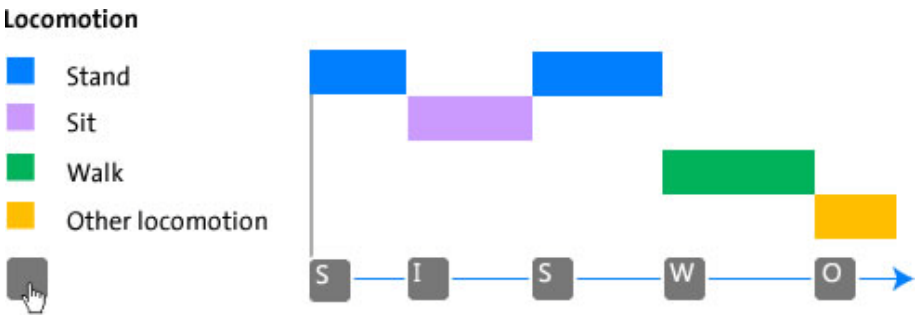
Behaviors can have a duration or not. Examples of behaviors that have a duration, are *Walking* or *Playing*. Examples of behaviors that do not have a duration, or of which duration is not important are *Answer Yes*, or *User error*. Behaviors with a duration are called **State events** and behaviors with no duration **Point events**.



Overlapping or non-overlapping behaviors

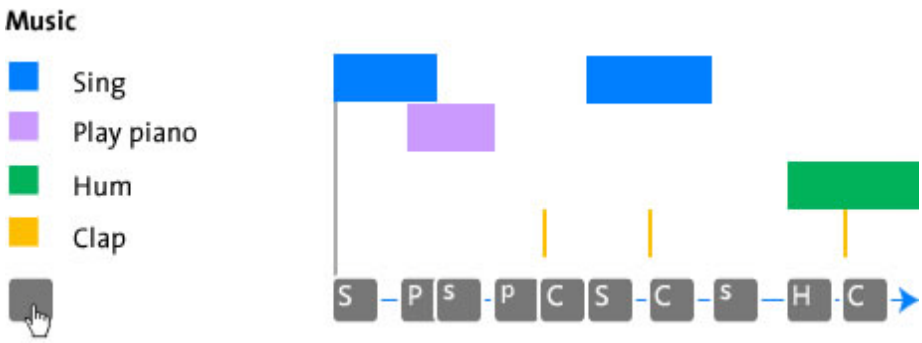
There are two types of groups with behaviors. A group in which the behaviors cannot overlap is called a Mutually exclusive behavior group and is the easiest to work with. In such a group the start of a new behavior automatically stops the previous behavior. You only need a key code for the start of each behavior. This makes scoring effort less.

During an observation, behaviors may occur that you did not define in your Coding Scheme and are not relevant for your study. To be prepared for this, define a behavior like *Other behavior*. This way you can stop an active behavior when something occurs that you did not think of when you created the Coding Scheme. Also, all behaviors in the group now add up in time to 100%.



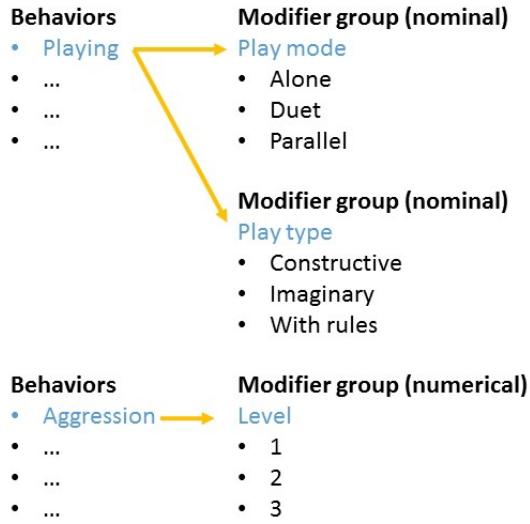
If the new behavior is relevant for your study, click the **Add new element** button at the bottom of the **Codes** window to add it to the Coding Scheme.

If it is not possible to define a group with non overlapping behaviors, create a group in which behaviors can overlap. Such a group is called a Start-Stop behavior group. In such a group scoring effort is higher because you need to press a key when the behavior starts and when it stops. In such a group there may also be time periods in which no behavior occurs.



Modifiers

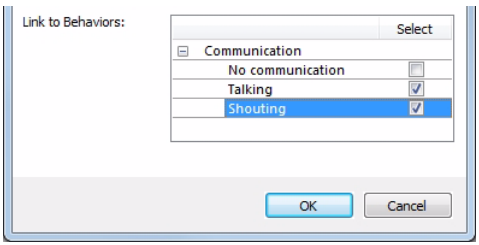
Optionally define Modifiers. Modifiers specify the behaviors more precisely. They can consist of text (nominal modifiers), or numbers (numerical modifiers).



If behaviors have a duration, the attached modifiers have a duration as well, independent on whether they are nominal or numerical. For both types of modifiers you can calculate statistics like the frequency or duration. For numerical modifiers, you can calculate additional statistics, like the minimum, maximum and mean values.

Scoring modifiers requires pressing extra keys, which makes scoring slower. Therefore, only define them when it is really necessary. This is, for example, the case when you want to know mean values.

To specify for which behaviors you want to score the modifiers, double-click the modifier group name and select to which behavior the modifier must be linked.

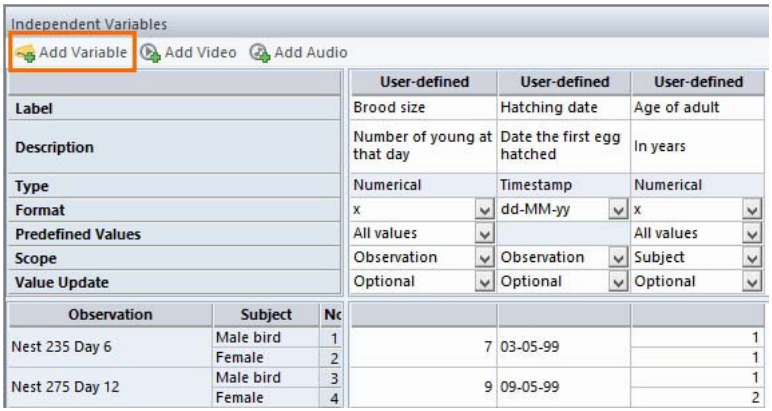


If the **Modifiers** column is not shown in your Coding Scheme, choose **View Settings** > **Modifiers**.

For more information on how to create a Coding Scheme, see **Coding Scheme** in The Observer XT Help.

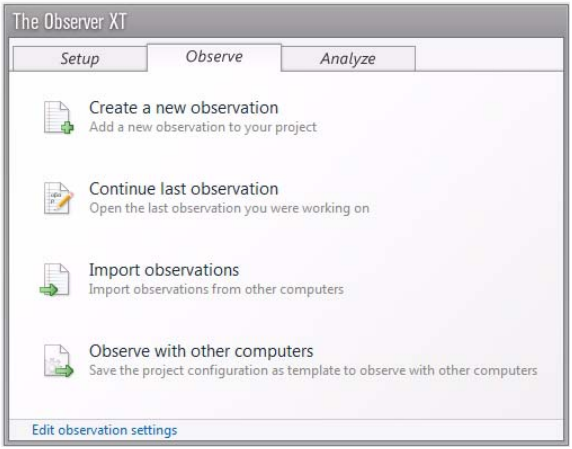
INDEPENDENT VARIABLES

Independent Variables are factors that can potentially influence the observation, and are assumed to remain constant for a certain subject (like a test person's ID or an animals age) or an observation session (like temperature). Define the variables that are important for your study (in the example below, *Brood size*, *Hatching date* and *Age of adult*). To do so, choose **Setup** > **Independent Variables**. Click **Add Variable** to enter your Independent Variables.



For more information on Independent Variables, see **Independent Variables** in The Observer XT Help.

Step 2 - Acquire your data

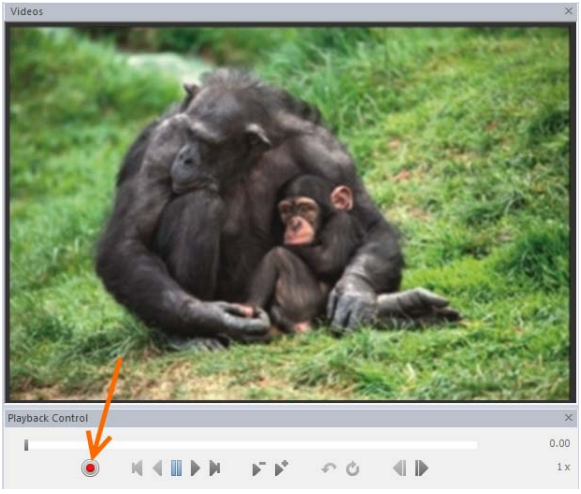


CREATE OBSERVATION

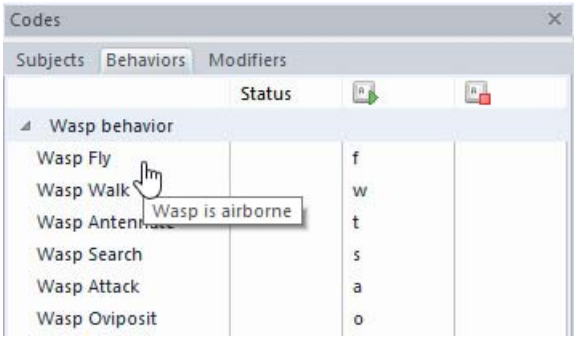
To create a new observation, choose **Observe** > **Observation** > **New**. Give the observation a name and select your videos. Position the video to where you want to start your observation.

OBSERVE

Press the **Start observation** button to start observing.



Score the observation by pressing the keys of your keyboard. In the **Codes** window you can see which of the elements you should score next, **Subject**, **Behavior** or **Modifier**. Once you scored the **Subject**, the tab **Behaviors** opens. Similarly, once you scored behaviors that have modifiers attached to it, the tab **Modifiers** opens.



You can view your scored data in a Time-Event plot similar to the plot in the Visualization part of the software. The plot "grows" while you are scoring, giving you a good overview of the scored data.

To stop the observation, click the **Stop observation** button.

OPTIONS

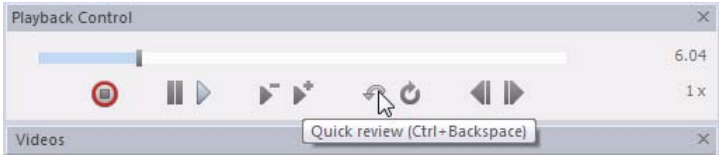
Free text

For each event line you can enter a comment of up to 1024 characters. For example, to transcribe speech from an audio file. Choose **View Settings** > **Comment**. Type or paste the text in the **Comment** cell in the event log or in the **Comment** window. Note that free text is not analyzed, however it can be visualized.

Control video playback

To play the video at lower or higher speed, click the **Speed down** or **Speed up** button. Press the space bar on your keyboard to pause and play the video.

If you missed an event in the video, click the **Quick Review** button. The video then jumps back a few seconds and plays the event you missed at a lower speed. Click the **Quick Review** button multiple times to jump back more in time



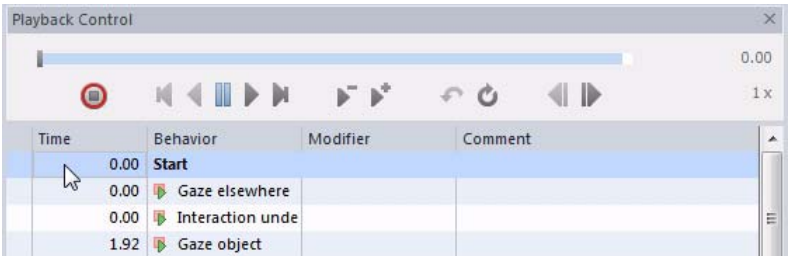
To review a video fragment multiple times, click the **Loop** button and set the flags that appear to the start and end of the fragment.

You can also use keyboard shortcuts to control video playback. See **Keyboard shortcuts** in The Observer XT Help for the options.

Code in runs

If you have a large Coding Scheme, you will probably not be able to code everything at once. It is common that you play the video once for every subject-behavior group combination. For example, score the behavior group *Playing* for the subject *Child* in run 1, *Verbal behavior* for *Child* in run 2 and *Verbal behavior* for *Parent* in run 3. After you finished with one run, do not stop the observation, but go back to the start of your observation. To do so, click the first row,

that has time **0.00**, and click the play button on the **Playback Control** window. You can now score the next subject - behavior group combination.



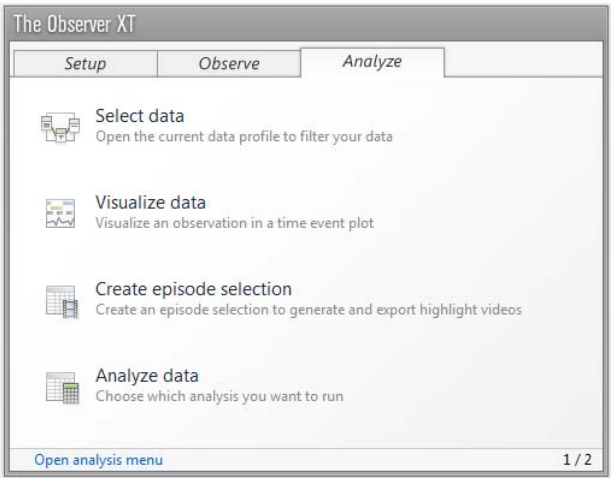
If you stopped the observation after a run, you have to click the **Start-observation** button again to continue with the next run.

Code in runs with multiple subjects

If you defined multiple subjects in the Coding Scheme, use the **Auto-record Subject** feature. With this feature the subject scored in the last event is automatically scored in the next event. Run through the video one or more times for one subject. Then run through the video for the next subject. Once you pressed the key code for that subject, it is automatically scored for the next events. To switch on Auto-record Subject, choose **Setup** > **Project Settings** > **Scoring Options**. Select **Auto-record Subject**.

Time	Subject	Behavior	Key
0.00	Child 1	Sit	C S
2.35	Child 1	Walk	W
6.41	Child 1	Other	O

Step 3 - Analyze your data



First determine what you want to analyze. For example:

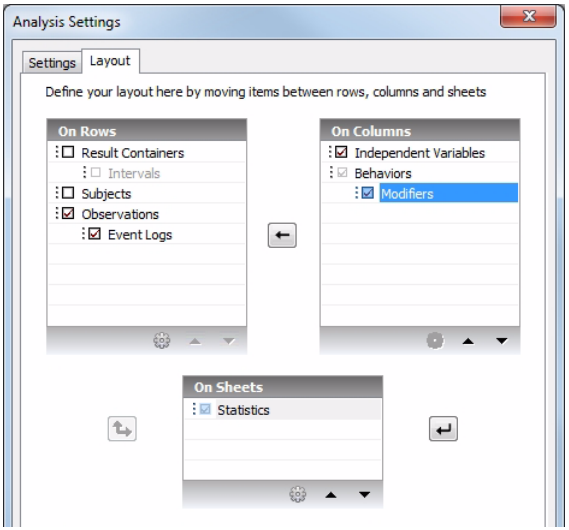
- Analyze the duration and frequency of behaviors in an observation or all observations. Carry out Behavior analysis (below) or, for numerical modifiers, Numerical analysis (page 19).
- Analyze a selection of behaviors, subjects or observations. Use Data selection (page 19) to filter the behaviors, subjects, or observations (page 20) and then carry out the analysis (below).
- Analyze a behavior while another one occurs. Use Data selection (page 19) to create intervals based on a behavior (page 22) and then carry out the analysis (below).

BEHAVIOR ANALYSIS

Choose **Analyze** > **Behavior analysis** > **New**. Click **Statistics** to choose which statistics you want in your analysis result. Next, click **Calculate**. You obtain a table with the calculated statistics.

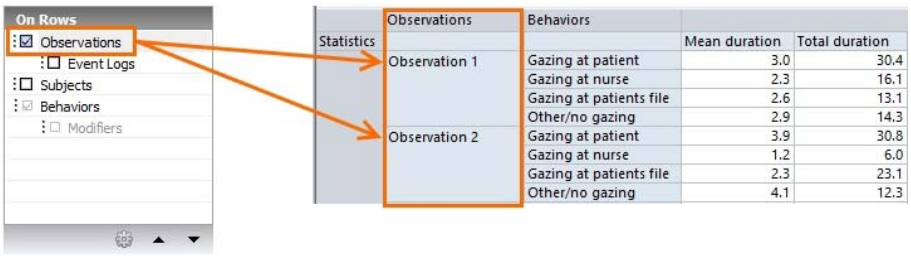
	Total duration	Total number
Gazing at patient	103.421	31
Gazing at nurse	47.667	21
Gazing at patients file	37.917	15
Other/no gazing	30.271	12

To change the table layout, click the **Layout** button. You can move categories with the arrow keys, for example from **On Rows** to **On Columns,** or **On Sheets**. Alternatively, drag the item from a box and drop it in another one. Choose how you want to organize the layout of the analysis result.



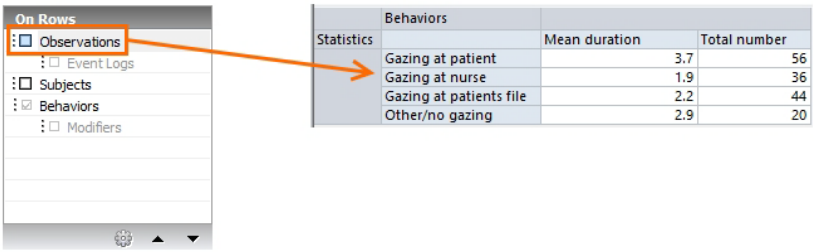
The effect of selecting and deselecting a category

If you select the checkbox in front of a category, you get separate analysis results for each item in that category. For example, if you have two observations and select the checkbox in front of **Observations**, you get separate analysis results for each observation.



Statistics	Observations	Behaviors	Mean duration	Total duration
	Observation 1	Gazing at patient	3.0	30.4
		Gazing at nurse	2.3	16.1
		Gazing at patients file	2.6	13.1
		Other/no gazing	2.9	14.3
	Observation 2	Gazing at patient	3.9	30.8
		Gazing at nurse	1.2	6.0
		Gazing at patients file	2.3	23.1
		Other/no gazing	4.1	12.3

If you deselect the checkbox, all observations are grouped and you get one analysis result for all observations together.



	Behaviors		
Statistics		Mean duration	Total number
	Gazing at patient	3.7	56
	Gazing at nurse	1.9	36
	Gazing at patients file	2.2	44
	Other/no gazing	2.9	20

It is not possible to deselect the category **Behaviors**.

NUMERICAL ANALYSIS

A numerical analysis can only be carried out if you have numerical modifiers in your Coding Scheme. A numerical analysis gives additional statistics above the ones obtained in the behavior analysis. For example if you defined *Sound level* as numerical modifier, you can calculate the minimum, mean and maximum sound level. The procedure is the same as for the Behavior Analysis.

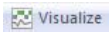
Modifiers			
	Minimum value	Maximum value	Mean value
Sound level	1.00	5.00	3.33

ANALYZE A SELECTION OF THE DATA

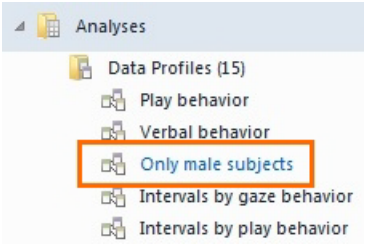
To analyze a selection of your data, do the following:

1. Choose **Analyze > Select Data > New Data Profile** to create a data profile. You can create multiple data profiles, for example, one to analyze gaze behavior and one to analyze play behavior.
2. Specify the selection.
   - Use **Filter** to select some observations, subjects or behaviors (page 20).
   - Use **Select Intervals** to create time intervals during which a certain behavior occurred (page 22).

3. Check the result of your selection. To do so click **Visualize** button on the toolbar and select the observations to visualize.



4. Click the correct data profile in the Project Explorer to activate it. This profile is used for analysis and visualization.

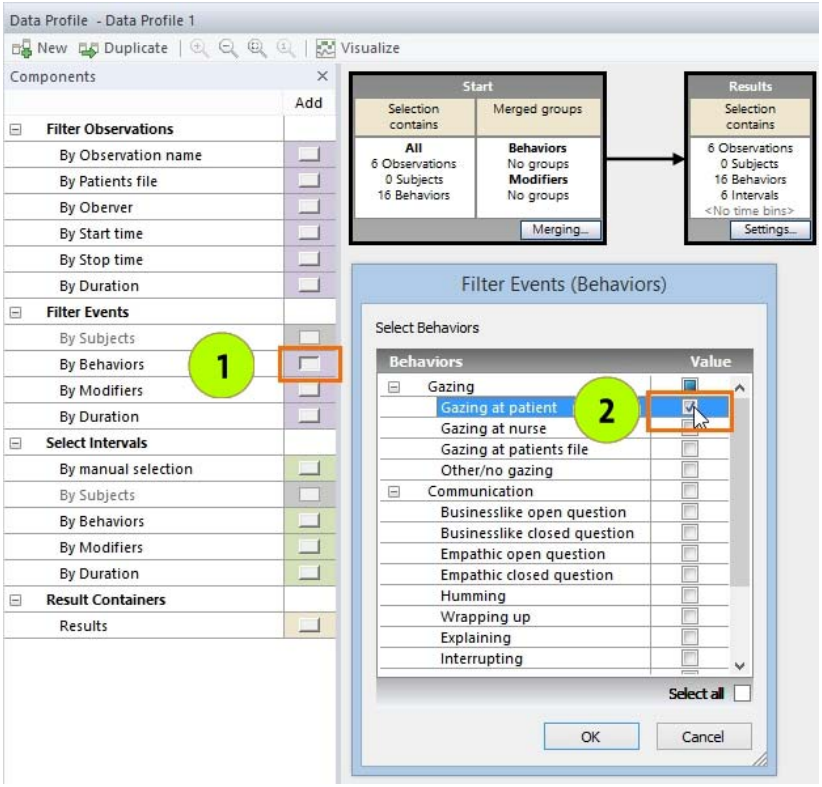


5. Analyze your data (see page 17).

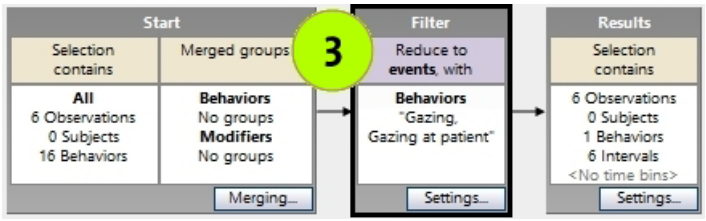
Analyze a selection of behaviors, subjects or observations

Use the filter option to analyze only some observations, subjects, or behaviors. For example, to analyze only the behavior *Gazing at patient*.

1. Click the box next to **Filter Events** > **By Behaviors**.
2. Make your selection.



3. Click **OK** and drag the box between the **Start** and the **Result** box.

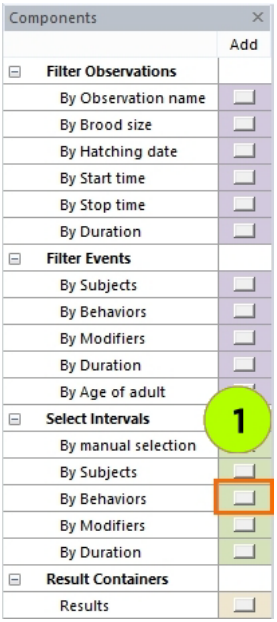


4. Visualize the selected data. Check whether your selection criteria are correct. Filtering gives you only those data you defined in your filter. In the example below the behavior *Gazing at patient* was filtered. Only this behavior is shown in the Visualization.

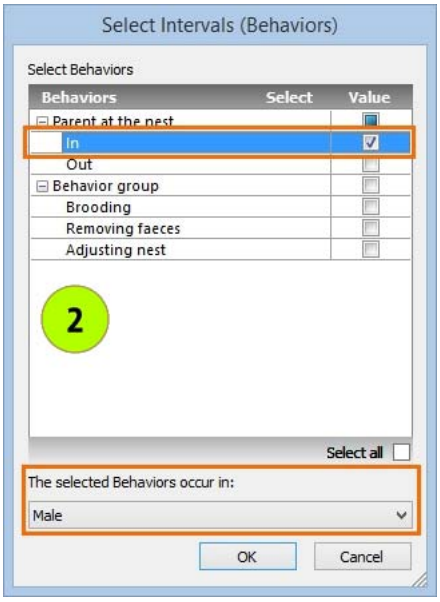
5. If the selection is correct, carry out Behavior analysis (page 17) or Numerical analysis (page 19) on the selected data.

Analyze a behavior while another one occurs

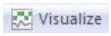
As an example, you want to know what a female bird did when the male bird was at the nest. Define a time interval based on the behavior (or behavior and its modifiers). To do so:



1. Click the box next to **Select Intervals** > **By Behaviors**.
2. Select the behavior in the window that opens. If you have multiple subjects in your Coding Scheme, choose from the **The selected Behaviors occur in** list which subject performed the behavior.



3. Then position the selection box in the data selection sequence (see **3** in the picture on page 21).
4. Visualize the data to check your selection. The time fragments when the male bird was in the nest are selected. All events that took place in these intervals, not only *Male* > *In*, are shown in the white areas in the visualization. These data



will be analyzed. Compare the figure below with the bottom one on page 21 for the difference between analyzing a subset of the data and analyzing intervals.

5. If the selection is correct, carry out Behavior analysis (page 17) or Numerical analysis (page 19) on the selected data.

It is also possible to group events and to select events or intervals with a minimum duration. Also, you can make time intervals based on a combination of behaviors and time, with manual interval selection. And you can analyze your data in regular time intervals. For more information on data selection, see **Select Data for Analysis** in The Observer XT Help.

For more information on analyzing and visualizing data, see **Calculate statistics** and **Visualize data** in The Observer XT Help.

Back up your data

Use the backup functionality in The Observer XT to:

- Make a safe copy of your project.
- Transfer your project to another computer.

Copying files with Windows Explorer does not backup everything. Therefore, always use the backup functionality in The Observer XT. Choose **File** > **Make Backup**. This makes a backup of your entire project in a file with the name of your project and the extension***.vpb**.

Make sure you create a backup at least once a day. Do not forget to create backups of your videos as well. Store the backups at a safe location, which is in a different building from the computer with The Observer XT.

To open a backup of your project, choose **File** > **Restore Backup**. Open the ***.vpb** file.