This user manual contains a complete description of every feature in CrazyTalk 7. Inside we have provided extensive hyperlinks and media samples for you to easily understand the relation between the features, in order to generate great visual results. For users who want to master all the Top CrazyTalk animation skills; this is a great source of your reference.
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Chapter 1
Knowing the Environment
# Knowing the Environment

The main user interface of **CrazyTalk** is divided into 7 parts. Please refer to the links below for more details about each parts.

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Main Menu</strong>&lt;br&gt;The main menu contains each command in <strong>CrazyTalk</strong> (the commands in the <strong>Timeline</strong> are not included).</td>
</tr>
<tr>
<td>2</td>
<td><strong>Tool Bar</strong> (Shortcut: F5)&lt;br&gt;The tool bar includes <strong>Actor Editing Tools</strong>, <strong>Adding Voice and Motion tools</strong>, and <strong>Export Tool</strong>.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Left-side Tool Bar</strong>&lt;br&gt;The tools in this panel are able to transform the actor, enter full-screen mode, or undo and redo actions.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Content Manager</strong>&lt;br&gt;(Shortcut: Windows - F4; Mac - fn + F4)&lt;br&gt;The manager keeps embedded and custom templates for applying.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Preview Window</strong> (Working Area)&lt;br&gt;The actor and visual results can be observed in the <strong>Preview Window</strong>.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Play Bar</strong>&lt;br&gt;The <strong>Play Bar</strong> contains basic playback tools for previewing voice, motions of the actor, and the background music of the project.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Timeline</strong>&lt;br&gt;(Shortcut: Windows - F3; Mac - fn + F3)&lt;br&gt;In the <strong>Timeline</strong> you are able to do more custom adjustments for the project.</td>
</tr>
</tbody>
</table>
Main Menu

The Main Menu contains the main commands grouped in File, Edit, Create, Animation, Window and Help menus.

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Project</td>
<td>To create an empty project.</td>
</tr>
<tr>
<td>Open Project</td>
<td>To open a CrazyTalk project file (*.ct7Project).</td>
</tr>
<tr>
<td>Save As Project</td>
<td>To save the current project to a target directory.</td>
</tr>
<tr>
<td>New Script</td>
<td>Clear data in every track of the Timeline.</td>
</tr>
<tr>
<td>Background Setting</td>
<td>To open the Background Setting panel and change the background to an image or a solid color.</td>
</tr>
<tr>
<td>BG Music Setting</td>
<td>To open the BG Music Setting panel and load an audio file as a background or modify the basic settings to the audio.</td>
</tr>
<tr>
<td>Import Model</td>
<td>To import an existing CrazyTalk actor (*.ct7Model, *.ctm).</td>
</tr>
<tr>
<td>Import Script</td>
<td>To import an existing CrazyTalk script file (*.ct7Script, *.cts).</td>
</tr>
<tr>
<td>Export</td>
<td>To export the current project into a designated media.</td>
</tr>
</tbody>
</table>
### Edit

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undo</td>
<td>To undo the last action.</td>
</tr>
<tr>
<td>Redo</td>
<td>To redo the last action.</td>
</tr>
<tr>
<td>Move</td>
<td>To relocate the actor.</td>
</tr>
<tr>
<td>Rotate</td>
<td>To rotate the actor.</td>
</tr>
<tr>
<td>Scale</td>
<td>To resize the actor.</td>
</tr>
<tr>
<td>Home</td>
<td>To restore the position of the actor to the center of the project.</td>
</tr>
</tbody>
</table>

### Create

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Capture</td>
<td>To capture an image from the web camera for creating a new actor.</td>
</tr>
<tr>
<td>Face Profile</td>
<td>To determine the actor’s profile and its strength.</td>
</tr>
<tr>
<td>Mask Editing</td>
<td>To divide the foreground and background areas.</td>
</tr>
<tr>
<td>Face Fitting</td>
<td>To define the facial features with the Face Fitting wizard.</td>
</tr>
<tr>
<td>Eye Setting</td>
<td>To adjust the details of the virtual eyes.</td>
</tr>
<tr>
<td>Teeth Setting</td>
<td>To adjust the details of the virtual teeth.</td>
</tr>
</tbody>
</table>
### Animation

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Import Voice</strong></td>
<td>To load an audio file (*.wav, *.mp3, *.m4a (Mac only), *.aif (Mac only)) as the voice clip for the actor.</td>
</tr>
<tr>
<td><strong>Record Wave</strong></td>
<td>To record a voice clip for the actor with the CrazyTalk Sound Recorder.</td>
</tr>
<tr>
<td><strong>TTS</strong></td>
<td>To convert type-in text into voice clip for the actor.</td>
</tr>
<tr>
<td><strong>Face Puppet</strong></td>
<td>To puppet with mouse movements to generate facial expressions with the Face Puppet panel.</td>
</tr>
<tr>
<td><strong>Auto Motion Settings</strong></td>
<td>To open the Auto Motion Settings panel to adjust the behavior for automatically generating auto motions for the actor.</td>
</tr>
<tr>
<td><strong>Voice Morphing</strong></td>
<td>To morph the actor's voice.</td>
</tr>
<tr>
<td><strong>Lips</strong></td>
<td>To adjust or add lip-sync keys in different time frames.</td>
</tr>
</tbody>
</table>

### Window

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tool Bar</strong></td>
<td>To show/hide the Tool Bar.</td>
</tr>
<tr>
<td><strong>Content Manager</strong></td>
<td>To show/hide the Content Manager.</td>
</tr>
<tr>
<td><strong>Timeline</strong></td>
<td>To show/hide the Timeline.</td>
</tr>
</tbody>
</table>
## Help

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Search</strong></td>
<td>Type in the text field to search for the specific feature.</td>
</tr>
<tr>
<td><strong>Help</strong></td>
<td>To access the online help.</td>
</tr>
<tr>
<td><strong>Bonus Content</strong></td>
<td>To access the official content web site for free Bonus Content Packs.</td>
</tr>
<tr>
<td><strong>CrazyTalk Forum</strong></td>
<td>To access the online CrazyTalk Forum web site.</td>
</tr>
<tr>
<td><strong><a href="http://www.reallusion.com">www.reallusion.com</a></strong></td>
<td>To access the home page of Reallusion.</td>
</tr>
</tbody>
</table>

**Search**

Help

Bonus Content

CrazyTalk Forum

www.reallusion.com
## Tool Bar

The tool bar consists of three sections (Actor Editing Tools, Adding Voice and Motion tools and Export Tool) as shown in the illustration below:

![Tool Bar Illustration]

### A. Actor Editing Tools

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Create New Actor</td>
<td>Click to load an image, shoot from the web camera to create a new actor, or load a CT7 Actor (*.ct7Model) file as the current actor.</td>
</tr>
<tr>
<td>2</td>
<td>Adjust Texture Coloring</td>
<td>Click to adjust the entire color tone of the actor.</td>
</tr>
<tr>
<td>3</td>
<td>Face Fitting</td>
<td>Click to invoke the Face Fitting panel to adjust the wireframe of the actor.</td>
</tr>
<tr>
<td>4</td>
<td>Face Profile</td>
<td>Click to determine the face profile of the actor.</td>
</tr>
<tr>
<td>5</td>
<td>Eye Setting</td>
<td>Click this button to invoke the Eye Setting panel to adjust the appearance of the eyes.</td>
</tr>
<tr>
<td>6</td>
<td>Teeth Setting</td>
<td>Click this button to invoke the Teeth Setting panel to adjust the appearance of the teeth.</td>
</tr>
<tr>
<td>7</td>
<td>Mask Editing</td>
<td>Click this button to invoke the Mask Editor panel to adjust the mask of the actor to determine the foreground area.</td>
</tr>
<tr>
<td>8</td>
<td>Background Setting</td>
<td>Click this button to invoke the Background Setting panel to apply custom background.</td>
</tr>
</tbody>
</table>
B. Adding Voice and Motion Tools

1. Import Audio
   Click this button to import an audio file to create actor motions with Talk, Listen and Lips-Sync Only modes.

2. Face Puppet
   Click this button to invoke the Face Puppet panel in order to manually generate facial motions.

3. Auto Motion Settings
   Click this button to invoke the Auto Motion Settings panel in order to manually adjust the motion reactions driven by the audio.

C. Export Tool

1. Export
   Click this button to invoke the Export panel for exporting video and images.
Left-side Tool Bar

You may use the features on the left-side tool bar to transform the actor, enter full-screen mode, or undo and redo actions.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Home</strong>&lt;br&gt;(Shortcut: Windows - home; Mac - fn + Left Arrow Key)</td>
<td>Restore original position of the actor to the center of the project.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Move</strong> (Shortcut: M)</td>
<td>Press this button and drag in the working area to relocate the actor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Rotate</strong> (Shortcut: R)</td>
<td>Press this button and drag in the working area to rotate the actor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Scale</strong> (Shortcut: S)</td>
<td>Press this button and drag in the working area to resize the actor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>Full Screen</strong></td>
<td>Click on this button to enter the Full Screen mode. Click it again or press ESC key to exit the mode.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><strong>Undo and Redo</strong>&lt;br&gt;(Shortcut: Windows - Ctrl + Z / Ctrl + Y; Mac - ⌘ + Z / ⌘ + ⌘ + Z)</td>
<td>Click these two buttons to undo or redo the last actions.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Content Manager

1. Category Tabs

Click these tabs to switch to the corresponding category library.

2. Menu Buttons

Click this button to show the menu for manipulating the Content Manager, including show and hide (Shortcut: Windows - F4; Mac - fn + F4), dock and undock the Content Manager, basic editing for the templates, change the view mode in the content manager or browse to find the selected template.
3. Template and Custom Library

Each category is divided into two libraries:

- **Template** Library: Contains embedded template installed along with the main program.
- **Custom** Library: Contains custom templates you add.

4. Templates

In the library pane, you may manipulate the templates, including applying the selected template (by drag-and-drop or clicking the Apply button); renaming or changing thumbnail of the custom templates.

5. Applying and Adding Templates

- ![Down](Image): Click this button to apply the selected template.

- ![Plus](Image): Click this button to add the current object in the scene into the Custom Library of the selected Category.

If you have selected a template in the Custom Library, then click this button to overwrite the selected template.
Changing the view mode

By changing the view mode, you are able to view the template in basic or detail mode. You may then sort the templates in the detail mode.

1. Right-click on the space area in the library.

2. Select the **Change View Mode** command in the right-click menu.

3. Alternatively, you may click the **Menu** button to show the right-click menu and select the **Change View Mode** as well.

4. The **Content Manager** will be toggled to the other mode.
5. You may then click the **Name**, **Size**, **Kind** and **Date Modified** captions to sort the templates.

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Kind</th>
<th>Date Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>23.4</td>
<td>ctip</td>
<td>7/16/12 3:02</td>
</tr>
<tr>
<td>Boy</td>
<td>22.2</td>
<td>ctip</td>
<td>7/17/12 7:19</td>
</tr>
<tr>
<td>Fat</td>
<td>18.6</td>
<td>ctip</td>
<td>7/17/12 4:50</td>
</tr>
<tr>
<td>Girl</td>
<td>18.1</td>
<td>ctip</td>
<td>7/17/12 4:32</td>
</tr>
<tr>
<td>Ha..</td>
<td>12.9</td>
<td>ctip</td>
<td>7/17/12 10:0</td>
</tr>
<tr>
<td>big</td>
<td>10.2</td>
<td>ctip</td>
<td>7/17/12 4:41</td>
</tr>
</tbody>
</table>
-changing the thumbnail

After you add an object into the **Custom Library** as a template, you are then allowed to change the thumbnail of the custom template.

**Capturing from the Scene**

1. Switch to the desired category tab (in this case, the **Project** tab).

2. Click the **Add** button to add the desired object into the **Custom Library**.

3. Go to the time frame where you want the appearance of the desired object to be captured as a thumbnail.
4. Make sure the template is selected.

5. Right-click on the template and choose the **Capture Thumbnail** in the right-click menu.

The current appearance of the object will then be captured as the new thumbnail.

---

**Replacing with an Image**

1. Follow the Steps 1 and 2 in the last section.

2. Right-click on the template and choose the **Load Thumbnail** in the right-click menu.
3. Browse and select a desired image.

4. The thumbnail will then be replaced.
# Play Bar

The Play Bar is used to control scene playback in **CrazyTalk**.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Play Head</td>
<td>Shows the current frame of the project. You may quickly drag it into any desired frame.</td>
</tr>
<tr>
<td>2</td>
<td>Voice Volume</td>
<td>To adjust the volume of the sound effect.</td>
</tr>
<tr>
<td>3</td>
<td>Previous Frame</td>
<td>To jump one frame backwards.</td>
</tr>
<tr>
<td>4</td>
<td>Jump to Start Frame</td>
<td>To jump to the cue frame of playback, or to the start frame of the project.</td>
</tr>
<tr>
<td>5</td>
<td>Play (Shortcut: Space bar)</td>
<td>To playback the current project.</td>
</tr>
<tr>
<td>6</td>
<td>Stop</td>
<td>To stop playback.</td>
</tr>
<tr>
<td>7</td>
<td>Jump to End Frame</td>
<td>To jump to the cue-out frame of the playback, or to the end frame of the project.</td>
</tr>
<tr>
<td>8</td>
<td>Next Frame</td>
<td>To jump one frame forwards.</td>
</tr>
<tr>
<td>9</td>
<td>Loop On/Off</td>
<td>To toggle playback loop on/off.</td>
</tr>
<tr>
<td>10</td>
<td>Current Time</td>
<td>To show the current time/frame. You may click the <strong>Time Settings</strong> button to toggle between time display modes.</td>
</tr>
<tr>
<td>11</td>
<td>Show Timeline</td>
<td>Bring up the <strong>Timeline</strong>.</td>
</tr>
<tr>
<td>12</td>
<td>Music Volume</td>
<td>To adjust the volume of the background music.</td>
</tr>
<tr>
<td>13</td>
<td>Playback / Export Range</td>
<td>Drag the red triangles to determine the playback / export range. Please refer to the <strong>Project Settings</strong> section.</td>
</tr>
</tbody>
</table>
Docking Panels

There are three panels in CrazyTalk that can be docked or undocked, the Tool Bar, the Content Manager and the Timeline.

By docking the panels, you can quickly access the tools or templates without having to hover the mouse too far; while by undocking the panels, you can get a wider and clearer working area for better viewing custom projects.

Docking and Undocking

Panels Docked

After the panels are docked, the tools on the Tool Bar, the templates in the Content Manager and the features in the Timeline can be easily accessed.

Panels Undocked

When the panels are undocked, they float above the main program and the working area enlarges to present a better view. You may then move the panels elsewhere to prevent from hindering the working area. If you are using dual-display environments, then you may move the panels to one display while keeping the main program on the other.
Dockable Area for Tool Bar

The **Tool Bar** can be docked to the top, bottom, left and right of the main program when you drag and drop it into the area.

Docking Top

Docking Bottom

Docking Left

Docking Right

Dockable Area for Content Manager

The **Content Manager** can be docked to the left and right of the main program when you drag and drop it into the area.

Docking Left

Docking Right
Dockable Area for Timeline

The **Timeline** can be docked to the top and bottom of the main program when you drag and drop it into the area.
Drag and Drop

CrazyTalk provides several drag and drop methods to accelerate the building of your scene. Please refer to the Drag and Drop Table section for more information on drag and drop behavior in CrazyTalk.

Drag-and-drop for creating

Creating Actor

Drag and drop an image (in .jpg, .jpe, .jpeg, .bmp, .png, .tga, .gif formats) to the working area and you may start the Create Actor Wizard to create a new character.

Creating Voice and Motion

Drag and drop an audio file, in .wav, .mp3, .m4a (Mac only), .aif (Mac only) formats, to the character and the character may start to have voice and motions.

You may alternatively drag and drop the audio file to the Voice, Lips and Auto Motion tracks to create a voice and motion for the actor.
Drag and drop a motion clip to the working area. The character will start to talk, or listen independently from the motion that was manually applied.

**Drag-and-drop for applying**

**Actor, Eye, Teeth**

You are able to drag and drop any actor, eye or teeth template from the Content Manager libraries (Actor, Eyes, and Teeth) to apply the template.

Drag and drop an actor template onto the current actor. The actor will be replaced while the motion and the voice are kept.

**Note:** You may also drag and drop from a folder to have the same results.

**Motion**

You are able to drag and drop any idle, motion clip or auto motion template from the Content Manager libraries (Idle, Motion Clip, and Auto Motion) to apply the template.
Drag and drop a motion template onto the character. The character will start the motion.

**Note:** You may also drag and drop from a folder to have the same results.

**Background Music**

If you drag and drop an audio file onto the **Music** track in the **Timeline** (Shortcut: Windows - F3; Mac - fn + F3), then it will turn into background music.
Asset Collection

You can drag and drop one or more assets, from the Content Manager, into your desired folder to create your custom library collection.

Drag and drop an asset from a different library of the Content Manager to a folder to build a custom collection.
# Drag and Drop Table

<table>
<thead>
<tr>
<th>Item</th>
<th>File Format</th>
<th>Drag and Drop Target</th>
<th>Working Area</th>
<th>Content Manager &gt; Custom Library</th>
<th>External Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td>.ct7project</td>
<td>To open the project.</td>
<td>Move or save project to the <strong>Content Manager (Project Library)</strong>.</td>
<td>Move or save project to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Image</strong></td>
<td>.jpg, .jpe, .jpeg, .png, .bmp, .tga, .gif</td>
<td>To start the <strong>Create Actor</strong> wizard.</td>
<td>N/A</td>
<td>Move or save image to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Character</strong></td>
<td>.ct7Model</td>
<td>To replace the current character.</td>
<td>Move or save character to the <strong>Content Manager (Actor Library)</strong>.</td>
<td>Move or save character to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Eyes</strong></td>
<td>.ctmEye</td>
<td>To replace the eyes of the current character.</td>
<td>Move or save eyes to the <strong>Content Manager (Eye Library)</strong>.</td>
<td>Move or save eyes to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Teeth</strong></td>
<td>.ctmTeeth</td>
<td>To replace the teeth of the current character.</td>
<td>Move or save teeth to the <strong>Content Manager (Teeth Library)</strong>.</td>
<td>Move or save teeth to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Motion</strong></td>
<td>.ct7idle .ct7motion .ct7script</td>
<td>To apply a motion onto the current character.</td>
<td>Move or save motion to the <strong>Content Manager (Idle Motion, Motion Clip or Script Library)</strong>.</td>
<td>Move or save motion to another directory.</td>
<td></td>
</tr>
<tr>
<td><strong>Auto Motion Template</strong></td>
<td>.ct7automo</td>
<td>To auto-generate template motions for the current character.</td>
<td>Move or save template to the <strong>Content Manager’s (Auto Motion Library)</strong>.</td>
<td>Move or save template to another directory.</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2
Project
The **Time Settings** involve two aspects, the project length and the playback / export range of the project.

### Project Length

In the **Time Settings** panel you may adjust the length of the project, the time unit shown on the time counter, and the viewing method of the camera.

1. Click the **Time Unit** button to open the **Time Settings** panel.

2. Adjust the settings in the panel:

   - **Animation Length**: Shows the total length of the project in frame count. The default length for each project is 2000 frames. The maximum frame number is 27000 (15 minutes).

   - **Select Time Unit**: You may decide to display the time unit in either frame format or time format.
Project Playback / Export Range

You can determine to play back or export within a certain range instead of the entire project.

- **Play Bar**: Drag the red triangles on the play bar to define the range.

- **Timeline**: Drag the flags on the frame unit track to define the range.
Chapter 3
Creating a Custom Actor
Creating a Custom Actor

CrazyTalk allows you to create a talking actor from an image. When applying virtual eyes and teeth, the motions and the lip shapes become more realistic. By changing the background, you are able to put the actor into a desired environment.

Creating Custom Actor

1. Obtaining an image with two methods below:

**Loading an Image**

- a. Click the **Create New Actor** button on the tool bar.
- b. The **Actor Creator** panel will show. Click the **Import Image** button.
- c. Load a desired image.

**Note:**

- The supported image formats are: *jpg, jpe, jpeg, png, bmp, tga* and *gif*.
- The best image is when the character is facing front and does not have a tilted head.
Capturing with Web Camera

a. Click the Create New Actor button on the tool bar.

b. The Actor Creator panel will show. Click the From Camera button.

c. The Camera Capture panel appears for capturing an image from the web camera.
Select the webcam you wish to use from the Device drop-down list.

(If your web camera is not on the list, please click the Refresh button to refresh the device list)

Specify the resolution from the Resolution drop-down list.

Click the Capture button to take a picture with the selected webcam.

(The content of the preview window will be captured and displayed on the right pane)

Click the OK button to confirm the captured image and exit.

2. The Creating Actor Wizard auto-starts and directs you to finish details for building a custom talking actor.

a. Image Processing

b. 4-Point Fitter

c. Face Fitting

d. Face Profile Setting

3. Add virtual eyes and teeth for the actor.

a. VividEye Technology

b. Mouth Settings
4. Determine the foreground and background areas.
   a. Editing the Background Mask
   b. Configuring the Background
Image Processing

The image processing tools allow you to enhance the quality of selected images. You may rotate and crop them in order to work with a portion of the original image source. This allows you to focus on facial details in order to create more accurate talking characters.

You may use the tools on the left side of the image processing menu to adjust the area, quality, and color settings of the image.

### Cropping an image

Cropping and image can be useful when you want to crop a face from a group photo, or remove a large background area that is not needed. Cropping the image allows you to remove the excess background area and enlarge the facial image you wish to work with. This does not change the original image size.

1. Click the **Crop Image** button.

2. Drag a marquee around the image by using the mouse to create a crop box.
   - Use the corner handles of the marquee to rotate or scale the crop box.
Use the mouse to move the crop box across the image as desired.

- Rotate the cropping box to align the arrow to the character's nose line.

3. Click the **Apply** button when done. Click the **Cancel** button to cancel the current crop box and restart.

### Rotating and Flipping an image

- Click the **Rotate CW** or **Rotate CCW** buttons to rotate the image by 90 degrees in the clockwise or counter clockwise direction.

- Click the **Flip** button to mirror the image on the horizontal axis. This function is useful for images obtained from scanners or cameras.
Automatically adjusting color levels

Click the **Smart Level** button to automatically adjust the color levels of the image. CrazyTalk analyzes the color levels and adjusts the brightness, contrast, hue and saturation levels to achieve optimum image quality.

![Before and After images](image)

**Note:**

You may access the feature by clicking the **Adjust Color** button on the tool bar. After you click the button, you are able to choose the feature from the panels below:

![Actor Color Adjustment](image)

Manually adjusting color levels

Click the **Color Level** button to manually adjust the brightness, contrast, hue and saturation levels of the image. Use the sliders in the menu box to adjust the values, or enter the numerical values for each parameter in the boxes next to the sliders.
You may access the feature by clicking the Adjust Color button on the tool bar. After you click the button, you are able to choose the feature from the panels below:
Creating a Custom Actor

Adjusting color balance

Click the **Color Balance** button to manually adjust the color balance.

- Drag the sliders to adjust the **Cyan - Red**, **Magenta - Green**, and **Yellow - Blue** levels. The box next to each property shows positive and negative values; depending on the position of the slider. The center value is zero.

- Select the **Highlights** radio button to apply color settings to the image's brighter areas.

- Click the **Midtones** radio button to apply color settings to the image's normal areas.

- Select the **Shadows** radio button to apply color settings to the image's darker areas.

**Note:**

You may access the feature by clicking the **Adjust Color** button on the tool bar. After you click the button, you are able to choose the feature from the panels below:
Auto Fit Anchor Points

The Auto Fit Anchor Points for the basic anchor points allows you to create a CrazyTalk actor in just a few clicks. This process is entirely automatic and requires no complex frame fitting techniques. Once you create a basic frame to fit the face, then you can use the fitting tools to increase the definition of the wire frame by simply adjusting the additional frame points.

CrazyTalk has its own embedded estimation of the four points which define the eye and mouth areas. If you wish to move the positions, then you may click and move the numbered indicators 1, 2, 3 and 4, on the image. Do this to adjust the fitting process as displayed in the reference image. Click the Reset button at any time to cancel your actions and start over.

Note:
Adjust the four points as accurate as possible to get the best fit for the eyes and mouth, but do not worry about precise details at this time. Refer to the Facial Wireframe Modes section for more information.
Face Fitting

The **Face Fitting** step assists you to set wireframes to frame up the facial features as precise as possible since when the actor starts to talk and move, the settings of the wireframe affect the result most.

### Basic Tools

- **Change Wireframe Color**: Click this button and cycle through different wire frame colors. This can be used if both the original image and the wire frames colors are the same color, as it would make it difficult to view and make corrections.

- **Select**: Click this button to pick and move components of the wire frame. This button is pressed and activated by default.
  - You may move the wires or the individual wire frame points.
  - Move the frame points get a wire shape more suited to the face contours.
  - To move multiple points simultaneously, hold the Ctrl key and click the desired control points. The selected control points will turn red. Release the Ctrl key and then move the points to the desired location.
- **Rotate**: Select a wire frame or multiple frame points and click this button to rotate them.

- **Scale**: Select a wire frame or multiple frame points and click this button to resize them.

### Zoom Tools

- **Pan Tool**: After you zoom in the image, you may press down this button and drag the image in order to pan to the desired area for modifying.

- **Zoom Out**: Click this button to zoom out the image for observing more of the image.

- **Zoom In**: Click this button to zoom in the image for better observing and modifying the details.

<table>
<thead>
<tr>
<th>Before zoom in</th>
<th>Zoom in for more easily modifying the details</th>
</tr>
</thead>
</table>

- **Actual Size**: Click this button so the image will be shown in its original resolution.

- **Fit to Window**: Click this button so that the image will be zoom in or zoom out in order to just fit into the preview window.
Magnify Tool: Press down this button and drag a rectangle around the desired area of the image in order to zoom in to the area for better observing and modifying the details.

- Drag a rectangle to surround the desired area
- Zoom in for more easily modifying the details

Fine-Tuning the Wireframes

1. By default, the Basic button is pressed (in basic mode).

2. Use the basic tools described in the last section to roughly frame up the wire frames as close to the facial-feature contours (skull, eyebrows, eyes, nose and mouth) as possible.
3. Click to press the **Detail** button to show more wire frame control points.

4. Thoroughly move the control points to make the wire frames even closer to the facial features.

---

**Note:**

Please refer to the [Hair Mesh Layer](#) section for more information.

---

### Wireframes for Opened Mouth

If the character in the image you have loaded is with opened mouth, then the position of the middle wire can not be determined; you need to do the following steps:
1. Make sure that the Detail button is pressed down.

2. Press down the Mouth Open button.

3. Move the wire with Yellow control points to match the edge of the upper lip; while the one with White control points to the edge of the lower lip.

**Note:**
If you want the actor to close up the mouth, then you need to activate the Force to Close feature in the Mouth Settings panel.

---

**Previewing with Calibration Buttons**

- Click the Calibration buttons to play back a short script intended for calibration.
- Click the Stop button to stop the playback.
Hair Mesh Layer

Character heads in the photos may not always be oval-shaped due to hair styles or accessories like hats, or even ears (of animals).

CrazyTalk provides a Hair Mesh Layer so that you may separate the ranges of the skull, and of the objects attached, into different layers.

With this design, broken face issues may be minimized when the character talks and moves. Even if the character's expressions are not exaggerated, sometimes the objects framed within the hair mesh layer may move a bit.
Specifying Face Orientation and Style

Click the **Face Profile** button to adjust the profile style. Then define the face profile of the character:
Defining the 3D Face Orientation

- Utilize the **Rotate** tool to fit the angle of the character's face. This will ensure that the 3D mesh of the head will match the facial angle of the character in the photo.

Rotate the mesh to fit the face angle
Selecting Appropriate Face Style

1. Select one of the 9 basic profiles to fit your character.

2. Press the Preview button and move your mouse to preview the head motion in the main viewport.

Examples:
CrazyTalk introduces **VividEye Technology** in a layer-based concept. The 6 Layers (Eyeball - Iris, Eyeball - White, Eye Light, Eye Shadow, Eyelash and Makeup) in the **VividEye** Settings greatly increase the realism of virtual eyes. Original eyes from the source image cannot roll, so it is important to add virtual eyes to the animation.
Creating a Custom Actor

Using VividEye

The six layers superimpose to create the appearance of natural eyes:

1. Switch the Content Manager to Actor >> Template tab >> Eye library.

![Content Manager screenshot]

2. You will see 5 categories of eye templates. Access into one of the folders.

![Eye template library screenshot]

3. Double click on the desired template to add virtual eyes to the actor. Please refer to the Eye Template Gallery section for more information.

4. Click the Eye Setting button at the tool bar to access the Eye Setting panel.

   - Eyeball Transform
   - Eyeball Iris Color and Eyeball Whites
   - Eye Light
   - Eye Shadow
   - Eyelash
○ Makeup
Eye Template Gallery

CrazyTalk provides a virtual eye template gallery to match the design style of the VividEye templates.

Cartoon Character

<table>
<thead>
<tr>
<th>Original Eyes</th>
<th>Virtual Eyes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Original Eyes" /></td>
<td><img src="image2" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image3" alt="Original Eyes" /></td>
<td><img src="image4" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image5" alt="Original Eyes" /></td>
<td><img src="image6" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image7" alt="Original Eyes" /></td>
<td><img src="image8" alt="Virtual Eyes Applied" /></td>
</tr>
</tbody>
</table>
### Anime Character

<table>
<thead>
<tr>
<th>Original Eyes</th>
<th>Virtual Eyes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Original Eyes" /></td>
<td><img src="image2" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image3" alt="Original Eyes" /></td>
<td><img src="image4" alt="Virtual Eyes Applied" /></td>
</tr>
</tbody>
</table>

### Animal

<table>
<thead>
<tr>
<th>Original Eyes</th>
<th>Virtual Eyes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Original Eyes" /></td>
<td><img src="image6" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image7" alt="Original Eyes" /></td>
<td><img src="image8" alt="Virtual Eyes Applied" /></td>
</tr>
</tbody>
</table>
### Comic Character

<table>
<thead>
<tr>
<th>Original Eyes</th>
<th>Virtual Eyes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Original Eyes" /></td>
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</tr>
<tr>
<td><img src="image5" alt="Original Eyes" /></td>
<td><img src="image6" alt="Virtual Eyes Applied" /></td>
</tr>
</tbody>
</table>

### Human

<table>
<thead>
<tr>
<th>Original Eyes</th>
<th>Virtual Eyes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7" alt="Original Eyes" /></td>
<td><img src="image8" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image9" alt="Original Eyes" /></td>
<td><img src="image10" alt="Virtual Eyes Applied" /></td>
</tr>
<tr>
<td><img src="image11" alt="Original Eyes" /></td>
<td><img src="image12" alt="Virtual Eyes Applied" /></td>
</tr>
</tbody>
</table>
Eyeball Transform

After applying an eye template, you may adjust the size and the location of the eyeballs.

Transforming Eyeball

1. Click the **Eye Setting** button at the tool bar to access the **Eye Setting** panel.

2. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.

3. Choose the **Eyeball - Iris** or **Eyeball - White** radio button.
4. In the **Transform** section, adjust the **Move** or **Scale** values to decide the size of the eyeball.

| Before being transformed | After being transformed |
# Eyeball Iris Color and Eyeball Whites

You may customize the color of the eyeball by changing the diffuse color of the iris and adjusting the whiteness.

## Changing Eyeball Colors

1. Click the **Eye Setting** button at the tool bar to access the **Eye Setting** panel.

   ![Eye Setting Panel]

   - **Select:**
     - Eye Ball-Iris
     - Eye Ball-White
     - Eye Light
     - Eye Shadow
     - Eyelash
     - Make up
   - **Check:** Eyelash  Make up
   - **Color:**
     - Brightness
     - Hue
     - Contrast
     - Saturation

2. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.

   ![Eye Selection]

   - Left eye
   - Right eye
   - Both eyes

3. Choose the **Eyeball - Iris** or **Eyeball - White** radio button.
4. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.

<table>
<thead>
<tr>
<th>Before being adjusted</th>
<th>After being adjusted</th>
</tr>
</thead>
</table>

Before being adjusted | After being adjusted
Eye Light

The **Eye Light** simulates the specularity effect on the eyeballs, which implies the light direction. This feature facilitates you in creating sparkling, crystalline, or turbid eyeballs.

**Setting Eye Light**

There are three sections in the panel involved in the designing of eye light; the **Transform**, the **Color**, and the **Opacity/Blur** sections.

1. You must [apply an eye template](#) from the eye gallery first.
2. Click the **Eye Setting** button at the tool bar to access the **Eye Setting** panel.

![Eye Setting panel]

- **Select:**
  - Eye Ball-Iris
  - Eye Ball-White
  - Eye Light
  - Eye Shadow
  - Eyelash
  - Make up

- **Transform**
  - Move
  - Scale

- **Color**
  - Brightness
  - Contrast
  - Hue
  - Saturation

- **Opacity / Blur**
  - Opacity
  - Blur

3. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.

![Eye setting options]

4. Choose the **Eye Light** radio button.
5. In the **Transform** section, adjust the position and the size of the eye light.

6. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.

7. In the **Opacity/Blur** section, adjust the value of the **Opacity** and **Blur** to decrease the overall-sharpness appearance.
Eye Shadow

The Eye Shadow features the strength of the sphere effect on the eyeballs. You may decide the size of the shadow, the color of the Diffuse image, and the opacity and blurriness of the Opacity channel.

### Setting the Sphere Sense of the Eyeball

If you need to set the sphere-feeling of the eyeball, then you may adjust the Eye Shadow to increase/decrease the sensation.

1. You must apply an eye template from the eye gallery first.
2. Click the **Eye Setting** button at the tool bar to access the **Eye Setting** panel.

3. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.
4. Choose the **Eye Shadow** radio button.

5. Adjust the sliders in the Color and **Opacity/Blur** sections.

| Heavy shadow (spherical eyeball) | No shadow (flat eyeball) |
Eyelash

CrazyTalk offers you Eyelash effects to generate a more vivid appearance in the eyes. You may apply the Eyelash effect to mimic mascara, and enhance the eyelashes of the actor. Notice that female eye templates contain longer eyelashes.

Using Eyelash

1. You must apply an eye template from the eye gallery first.

2. Click the Eye Setting button at the tool bar to access the Eye Setting panel.

3. You may determine if you want the actor to have eyelash or not by activating or deactivating the Eyelash check box.
4. Choose the **Eyelash** radio button.

5. In the **Color** section; adjust the value of **Brightness**, **Contrast**, **Hue** and **Saturation** to change the color of the eyelashes.

**Note:**

Click and keep the **Close Eye** button pressed in order to view the **Eyelash** with closed eyes.
Adjusting the Length of Eyelash

1. Click the **Eye Setting** button at the tool bar to access the **Eye Setting** panel.

2. You can decide the length of the eyelashes by adjusting the **Scale** value.

---

Normal eyelashes | Longer eyelashes
Creating a Custom Actor

Makeup

CrazyTalk offers Makeup effects to generate vivid eyes. With the Makeup feature, you may generate various make-up styles such as; Smokey, golden shimmering or bruised eyes. You can also use it to conceal or cover creases or defects on the actors' eyelids. Distortions and stretching issues, created when actors close their eyes, can also be covered with Makeup effects.

Adjusting Makeup

1. You must apply an eye template from the eye gallery first.

2. Click the Eye Setting button at the tool bar to access the Eye Setting panel.

3. You may determine if you want the actor to have makeup or not by activating or deactivating the Makeup check box.
4. Choose the **Makeup** radio button.

5. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.

6. In **Opacity/Blur**, adjust the **Opacity** and **Blur** values to define the clarity of the makeup.

**Note:**

Click and keep the **Close Eye** button pressed in order to view the **Makeup** effect when eyes are closed.
## The Benefits of Makeup

### Adding Eye Cosmetics and Eyelashes

<table>
<thead>
<tr>
<th>Original image</th>
<th>With Makeup</th>
</tr>
</thead>
</table>

### Changing Eye Shapes

You can use the **Makeup feature** to act as eyelids when you change the eye shapes. The following example turns big eyes into natural-looking small eyes.

1. Use an actor with properly fitted wire frames.

<table>
<thead>
<tr>
<th>Original image</th>
<th>Well-fitted Eye wires</th>
</tr>
</thead>
</table>

2. Change the eyes' wires to change the shape of the eyes. You may see the new eyelids mapped over the original image.
3. Apply the **Makeup** effect to conceal the original eye image.

<table>
<thead>
<tr>
<th>Change eye shapes</th>
<th>Result</th>
</tr>
</thead>
</table>

| Eye shadow applied | Eyelash applied |
**Concealing Image Stretch Issues on Eyelids**

When an actor's eyes close, you may sometime see an image-stretch issue. With the **Makeup** effect, you can cover the stretching image with solid color.

| The eyelid image stretches as the actor blinks without makeup. | Apply a makeup effect to conceal the stretching image |
Mouth Settings

Every character in CrazyTalk is able to talk. You may apply a virtual mouth with teeth, along with modifying the mouth color and lips settings on the character.

Applying Mouth Template

1. Switch the Content Manager to Actor >> Template tab >> Teeth library.

2. You will see teeth templates.
3. Apply one of the templates from the Template library.

4. Click the Teeth Setting button at the tool bar to access the Teeth Settings panel.
   - Teeth
   - Throat
   - Lips
Teeth

After you apply a virtual mouth, you may then modify the location, orientation and the color of the teeth inside the mouth.

**Teeth Location and Angle**

1. Click the **Teeth Setting** button at the tool bar to access the **Teeth Settings** panel.

![Teeth Settings Panel]

   - **Select:**
     - Teeth
     - Throat
     - Lips
   - **Transform**:
     - **Move**
       - X: 0
       - Y: 30
     - **Scale**
       - X: 100
       - Y: 100
   - **Color**:
     - Brightness: 0
     - Contrast: 0
     - Hue: 0
     - Saturation: 0
     - Rotate: 0

2. To set the size of the teeth, use the **Scale** feature. Adjust the X/Y values to adjust the width and height of the teeth.
3. Use the **Rotate** value to decide the orientation of the teeth and match the angle of the mouth.
1. Click the **Teeth Setting** button at the tool bar to access the **Teeth Settings** panel.

2. Use the **Color Settings** feature to choose the color of the teeth. Move the **Brightness**, **Contrast**, **Hue**, and **Saturation** sliders to adjust the teeth color. Alternatively, enter a number in the boxes next to the slider bar to change the parameter value.
| Grey teeth | Teeth whitened |
Throat

**CrazyTalk Animator** lets you modify the inner mouth and throat color for when mouths need to be opened wide. After you apply a virtual mouth, you may then modify the oral color.

### Changing Throat Color

1. Click the **Teeth Setting** button at the tool bar to access the **Teeth Settings** panel.
2. Choose the **Throat** radio button.
3. In the **Color** section, adjust the value of the **Brightness**, **Contrast**, **Hue** and **Saturation**.

![Teeth Settings Panel]

Narrow throat | Deep throat
Lips

Most of the time, characters in photos smile. However, the mouth shape may not be as natural as you might expect when characters talk in CrazyTalk. This is because the height of the lip corners. You may use the lip settings to level the lip corners and keep the mouth line as flat as possible.

After you apply a virtual mouth, you may modify the corners of the lips.

### Leveling the Lip Corners

1. Click the Teeth Setting button at the tool bar to access the Teeth Settings panel.
2. Choose the Lips radio button.
3. In the Lips corner section, adjust the position values of the Left Corner and Right Corner.

![Lip corners before and after adjusted]

### Closing Actor's Mouth

If the character in the original image is with opened mouth, then you may need to close it with the Force to Close feature.

1. Make sure that the control points for the open lips are correctly specified when adjusting the wire frame.
2. Click the Teeth Setting button at the tool bar to access the Teeth Settings
3. Activate the **Force to Close** box to close the character's mouth.
Creating a Custom Actor

Editing the Background Mask

The background mask hides all unnecessary areas of the loaded photo. This helps you keeping only the areas you are interested in, such as the character’s head or body.

There are two methods to generate a background mask for your image.

**Using Mask Editing Panel**

1. Click the **Mask Editing** button at the tool bar to access the **Mask Editor** panel.
2. Using the tools in the panel to paint on the unnecessary parts in the image to add mask on the image.

There are two modes in the **Mask Editor** which facilitates you to quickly add mask to the image:

- **Auto Mode**.
- **Manual Mode**.

3. Click the **OK** button and the colored area of the image will be filtered out.

### Zoom Tools in Mask Editor

- **Pan Tool**: After you zoom in the image, you may press down this button and drag the image in order to pan to the desired area for modifying.

- **Zoom Out**: Click this button to zoom out the image for observing more of the image.

- **Zoom In**: Click this button to zoom in the image for better observing and modifying the details.
Loading an Image with a Predefined Alpha Channel

If you wish to perfect your image mask, then you may pre-save your image with a pre-defined
alpha channel. This can be done by means of an external image editor. Once you create your mask outside, simply load the image into CrazyTalk. The alpha channel information will automatically be applied as the background mask in the Background Mask Editing panel.

Adding and editing alpha channels in an external image editor (e.g. Photoshop)

**Note:**

- The alpha channel information can be in 32-bit BMP, TGA or PNG format.

- If you wish to save the source image as PNG file, then remove the background layer, erase any unnecessary area of the image and save. You do not need to create an alpha channel layer in the Channels panel.
Auto Mode for Masking

When your source image contains simple background area with similar color or when the contours of the character are not complicated, you can do it in the **Auto Mode** to quickly define the mask for the background area. This mode is suitable for the character with sharp and clear contour edges because **CrazyTalk** can quickly auto-masks areas according to the edges.

Before you add mask, you need to [create an actor from an image](#). After the actor is generated, it is by default without mask. Therefore, even if you replace the background, the original background of the image still conceals the custom background of the project.

| An actor without being masked. | The background of the original image conceals the custom background. |
Using Auto Mode of Mask Editor

1. Click the Mask Editing button at the tool bar to access the Mask Editor panel.

2. If you are in the Manual Mode, then click the Go to Auto Mode button to switch to the Auto Mode.

- The mask added in the Manual Mode will be abandoned after you switch to the Auto Mode.
- A new mask will be automatically append onto the image.
- Modify the mask with following steps.

3. Press down the Mask Actor button and roughly draw contours to frame around the character (do not worry if the contour is enclosed or not).
4. **CrazyTalk** estimates the character’s edge from the contours you draw to determine the actor area.

5. Even if you draw strokes, **CrazyTalk** can still find the edge of the actor.

6. If the edge goes out of the character, then press down the **Mask Background** button.
7. Draw strokes on the desired area to convert the area with similar color to background.

8. Click the Preview button to check out the mask result. The checkboard grids indicate that the original background is makes.

9. If you think the edge of the mask is too jaggy, then increase the **Edge Blur** value.
10. Click the **OK** button if you are satisfied with the mask result.

**Note:**
If you want to modify the details of the mask, then click the **Go to Manual Mode** button to enter the mode with current mask result.
Manual Mode for Masking

When your source image is complicated and the contour edges of the character cannot be clearly determined in the *Auto Mode*, you can use the *Manual Mode* to modify the details of the mask by carefully paint the mask with the tools in this mode. Please note that you can always start with rough mask generated from the *Auto Mode* and then modify the rough mask in the *Manual Mode*.

**Using Quick Select Tools**

1. Click the **Mask Editing** button at the tool bar to access the **Mask Editor** panel.

2. If you are in the *Auto Mode*, then click the **Go to Manual Mode** button to switch to the *Manual Mode*.
   - The mask added in the *Auto Mode* will be brought to the *Manual Mode*.
   - Optionally click the **Clear** button to remove the entire mask.

3. Press down the **Color Range** button and then pick on the image to fill with the mask color.
Areas with similar will also be masked.

The similarity is determined by the Tolerance value.

4. Hold the Shift key (for Windows) or Command key ( for Mac) and pick on the image to include more colors.

5. Hold the Alt key and pick on the image to exclude colors.
6. Click the **Preview** button to check out the mask result. The checkboard grids indicate that the original background is makes.

7. You are able to **use the Brush Tools** afterwards for further modifications to the mask.

8. Click the **OK** button if you are satisfied with the mask result.

**Note:**
- If the background is relatively simpler than the character, then directly pick the background colors with the **Color Range** tool; otherwise, pick the colors on the character and click the **Invert** button.
**Using Brush Tools**

To modify the mask details, you can use the **Brush Tools**.

1. Press down the **Brush** button in the **Brush Tools** section.

2. Draw strokes on the image to determine the masked area.

3. Press down the **Eraser** button and paint on the image to correct the excessive areas of the mask.

4. Click the **Preview** button to check out the mask result. The checkboard grids indicate that the original background is makes.
5. Press down the **Blur** button and paint on the edges of the mask to smooth the jaggy ones.

6. Click the **OK** button if you are satisfied with the mask result.

**Note:**

If you click the **Go to Auto Mode**, the mask you have created in the **Manual Mode** will be discarded.
Configuring the Background Settings

You can replace the background with custom image or color after you have added mask to the loaded image. Click the Background Settings to specify the background color or image.

- Choose Actor Only to replace the background with custom color picked besides the Color Selected.
- Choose Original Image if you want to leave the background unchanged.
- Check Import Image to load a custom image as the background.
- Specify how you want the image to be placed using the Position drop-down box.

Importing Image for Changing Environment

If you want to change the environment or the atmosphere for the actor, you can import a custom image.

1. Load an image to create an actor.

2. Customize the mask.
3. Choose the **Import Image** radio button in the **Background Setting** panel.

4. Load a custom image to change the environment.

---

**Using Original Image as Background**

This method is suitable when you are satisfied with the background of the source image while you do not want the background to be distorted by the motion of the actor.
Creating a Custom Actor

| Custom actor is created | Background distorts as the actor moves |

1. **Create an actor** with a source image.

2. **Customize the mask.**

3. Set the background with the **Original Image**

4. Play back and the background will not be affected by the motion of the actor.
Note:

Please note that **CrazyTalk** automatically fix the original image according to the mask area, which causes the noises shown on the background.

If you want to remove the noises, then you must prepare a clean background image and then choose the **Import Image** radio button to load it as the background.

| Prepared background image | Load the image as the background to eliminate the noises |
Creating a Custom Actor

Importing any Image as Background

Combining the mask-editing technique and the background-replacing methods, the actor can be placed to any other body by loading any other image to create an amusing sensation.

1. **Create an actor** with the source image.

![Image 1](image1.png)

2. **Customize the mask.** You may mask every parts of the image except the head of the character.

![Image 2](image2.png)

3. Choose the **Import Image** radio button in the **Background Setting** panel.

4. Load any other desired image.
5. Transform the actor to fit the background.
Chapter 4
Adding Voice to an Actor
Adding Voice to an Actor

An actor in CrazyTalk can open its mouth and speak. You may use four methods to add voices to an actor.

1. Click the **Import Audio** button on the top tool bar. Inside the panel you will find four different methods for importing voices.

2. Choose a method and click its button.

   - **Using the Sound Recorder**
   - **Importing Wave/MP3/M4A/AIFF Files**
   - **Converting Text to Speech**
   - **Using Talking Scripts**

**Note:**

After the voice is generated, you will then be asked to determine the loading mode in order to generate an **Idle Motion** or an **Auto Motion** for the actor.
Using the Sound Recorder

CrazyTalk provides a sound recorder that can record voice from various audio sources. This audio can then be used as a script to animate the actor. The sound recorder can record sounds from various audio devices such as a microphone, phone lines, CD players, audio-in lines, or any other auxiliary input devices connected to your PC.

Using the Sound Recorder

To record sound, click the Import Audio and then the Record Audio button. The sound recorder will then open.

Follow these steps to create an audio script:

1. Select the source for sound recording from the Input Device drop-down list.

2. Switch your MAC OS to System Preferences >> Sound >> Input tab, and adjust the recording volume with the Input Volume slider. To get rid of sound breaks, do not drag the Input Volume slider to the extreme right.

3. Click the Record button to start recording. Recording from the specified input device will then start.

4. Click the Stop button to stop recording sound.

5. Click the Play button to play back the recording.

6. If you are satisfied with the results, then click the OK button. If not, then press the Record button to record again.

Note:
The maximum length of a sound recording is 15 minutes.
CrazyTalk provides useful features for importing audio files and using them as scripts to animate actors. For instance, if you wish to animate your actor singing a song, then you may import the song in WAV/MP3/M4A (Mac only)/AIF (Mac only) format.

### Importing WAV/MP3/M4A (Mac only)/AIF (Mac only) Files

To import WAV/MP3/M4A (Mac only)/AIF (Mac only) files, please follow the steps below:

1. Click the **Import Audio** button and then the **Audio File** button to import a speech file in WAV/MP3/M4A (Mac only)/AIF (Mac only) format. Alternatively, you may drag and drop an audio file into the working area.

![Audio import options:](image)

- **Record Audio**
- **Audio File**
- **TTS**
- **Import Script**

2. Specify the name and location of the WAV/MP3/M4A (Mac only)/AIF (Mac only) file by choosing in the dialog box.

3. Click the **Open File** button to open the file. The file will then be imported and used as a script.

### Note:
The maximum length of an imported audio file is 15 minutes.
Adding Voice to an Actor

CrazyTalk can also animate through text-to-speech engines. By default CrazyTalk is connected to Microsoft’s TTS (Text-to-Speech) engine, but users may incorporate their own additional engines if they wish to create their own talking scripts.

Converting Text to Speech

To use the TTS engine, click the Import Audio and then the TTS button. The Text to Speech Editor will then open.

Follow the below steps to create an audio script:

1. Type the text in the editor window. Alternatively, you may also copy and paste text from any word processing program.

2. Select the type of voice to be used by the actor by choosing in the Voice Mode dropdown list. Various voices for both sexes, with different settings, are available as shown below.
3. Adjust the voice by using the **Volume**, **Pitch**, and **Speed** sliders to achieve the desired effect. You may need to experiment a little with these settings before you get the desired results. Click the **Reset** button at any time to reset the sliders to their default values.

4. Click the **Hear it** button to play back the text.

5. Click the **OK** button when done.
Using Talking Scripts (ct7Script, CTS)

CrazyTalk provides useful features for importing script files that can be applied for both voice-overs and actor expressions.

Using Talking Scripts

1. Click the Import Audio button and then the Import Script button to import a speech file created with CrazyTalk.

   ![Audio import options]

   Record Audio  Audio File  TTS  Import Script

2. Click the Open File button to open the file. The file will then be imported and used as a script.

   **Note:**
   Please note that CrazyTalk Scripts contain reusable and re-editable voices, lipsyncs and facial expressions.
Applying Voice Scripts

You may directly apply the studio-level samples of designed scripts from the library.

1. In the **Content Manager**, switch to the **Voice Script >> Script >> Samples** library.

   ![Content Manager screenshot]

2. Double click on the desired template to apply the voice script.

   ![Content Manager screenshot]

**Note:**

- A *.ct7Script file contains actor's voice, lip shapes and auto motion. When you apply the template of a script, the data in the **Audio**, **Lips** and **Auto Motion** tracks will be replaced.
If you want to create a custom script from the current project, then the data in the Motion Clip and Auto Motion tracks will be merged before being saved, which is different from the data structure of a created custom motion clip.
Chapter 5

Animating Actors
Animating Actors

There are several ways to animate your actor in a project:

- **Idle Motions**
- **Auto Motions**
- **Adding Motion Clips from the Library**
- **Blending Facial Expressions with the Face Puppet Panel**
Getting Bonus Motion Content

After installing **CrazyTalk**, some default templates in the **Content Manager** will also be installed. However, if you need more templates for **Auto Motion**, **Voice Script** or **Motion Clip** libraries, then it is highly recommended that you [download and install the bonus pack](#) from the official web site.

**Auto Motion**

You will get 78 more templates for the **Functional**, **Scenario** and **Idle** libraries.

---

![Auto Motion Library Diagram](#)
Animating Actors

Auto Motion >> Scenario >> Sing Library

Auto Motion >> Scenario >> Human Sound Library

Auto Motion >> Scenario >> Listen Library

Auto Motion >> Idle Library
Voice Script

You will get 32 more templates for the **Practice Audio** and **Samples** libraries.
Motion Clips

You will get 89 more templates for the Motion Clip library.
Idle Motions

An idle motion is a motion that simulates different actor motions and moods while the actor is, or is not talking or listening. With the idle motion, the actor can automatically move so that it looks more vivid rather than having a still cardboard with a human image on it. It creates life-like base movements even before you start animating or lip syncing your custom actor.

Default Idle Motion

1. Create a new actor or apply an actor from the library.

2. Playback the project. The actor will start to move without any voice.

Playback to observe the default idle motion.

Using Idle Motion from Library

Because the default idle motion is mild and neutral; you are able to change to another idle
motion from the library to show the true mood of the actor.

1. **Create a new actor** or apply an actor from the library.

2. In the **Content Manager**, switch to the **Auto Motion >> 03_Idle** library. There are many templates of idle motion ready for use.

3. Double click on the desired template to change the idle motion of the actor.

4. Playback the project.
Playback to observe the result of the applied idle motion.
LipsSync with Idle Motion

In CrazyTalk, each time you apply a voice for the actor, the voice causes the actor to move (also known as Auto Motion mechanism). However, if you only need the idle motion instead of the auto motion, then you can apply voice in LipsSync only mode.

1. Create a new actor or apply an actor from the library.

2. Add voice to the actor in LipsSync only mode.

Select Default Auto Motion

Talk Mode, Listen Mode, LipsSync only

The actor utters with only mouth shapes and default idle motion.

Actor talks with default idle motion
Auto Motions

Auto Motions are motion patterns that are automatically generated when an actor is applied with a voice in Talk or Listen mode. When the actor is in the Talk mode, the actor's motion will be more active especially when it touches the peaks of the voice wave line.

On the contrary, the actor listens and passively reacts to the context of the voice when it is in Listen mode.

Generating Auto Motion

1. Create a new actor or apply an actor from the library.
2. Click the **Import Audio** button on the tool bar. You may choose either way to **generate voice** for the actor.

![Audio import options]

3. Once the voice is generated, you need to determine the mode for applying the voice.

![Select Default Auto Motion]

- **Talk Mode**: The actor talks with spontaneous motions in accordance to the context of the voice.
- **Listen Mode**: The actor listens to the voice with motions reacting to the voice.
- **LipsSync only**: The actor utters with only mouth shapes and **idle motions**.

4. Playback the project. The actor starts to talk or listen to the voice with motions.

**Note:**

- Please note that at the end of the steps, the actor's motion is in default motion patterns. By applying different auto motion templates, the actor moves with different motion patterns.
- If the actor has been applied with auto motions, then you may further adjust to ease or dramatize the motions.
Applying Auto Motion Template from the Library

*CrazyTalk* introduces a major feature - **Auto Motions**, which are the biggest breakthrough in generating animations from your own voice strength; with all sorts of animation styles, you can save a lot of time while increasing the realism of your actor’s motions. **Auto Motions** are basically motion patterns that react to the voice. Once you apply an audio file, *CrazyTalk* then utilizes two basic motion patterns for **Talk** and **Listen** modes. You may also change to another pattern by applying different templates from the library.

**Applying Auto Motion Templates from the Library**

1. **Create a new actor** or apply an actor from the library.

   ![An actor ready to talk](image1) ![An actor ready to listen](image2)

2. Load an audio file as the actor’s voice and use the default auto motions of **Talk** or **Listen** modes.

   ![Select Default Auto Motion](image3)

3. In the **Content Manager**, switch to the **Auto Motion >> Functional** or **Auto Motion >> Scenario** libraries.
4. Double-click on the desired template to change the motion pattern.

## Choosing an Ideal Auto Motion Template

In the **Content Manager**, there are two libraries that contain **Auto Motion** templates, **Functional** and **Scenario**.

- **Functional Library**: The templates in this folder trigger the actor to do basic movements for head, body or eyeballs without facial expressions.

- **Scenario Library**: The templates in this folder apply not only to the movements of the head, body and eyes, but also add personality, usually with facial expressions, to the actor which is suitable for specific situations or animation styles; such as thinking in a study, being scared in a haunted house, or singing a song on a stage.
If you want the actor to do basic movements without facial expressions, such as head leaning back and forth, body moving left and right, or actor stretching, then choose one of the templates from this library.

Scenario >> Human Sound, Talk and Sing Libraries - Active Auto Motions
In the Scenario library, the templates are categorized into different folders; for the active auto motions with facial expressions, the templates are put in the Talk, Sing and Human Sound folders. You may then apply either of the template according to the context of the actor's voice.

**Scenario >> Listen Library - Passively Reacting Auto Motions**

In the Scenario library, the templates are categorized into different folders, for the passive auto motions in the folder they are in the Listen folder.

In the Scenario library, the templates are categorized into different folders; for the passive auto motions with facial expressions, the templates are put in the Reaction folder. You may then apply either of the template according to the context of the actor's voice.
# Introducing the Auto Motion Setting Panel

## Auto Motion Setting Panel

<table>
<thead>
<tr>
<th></th>
<th>Sound Wave Display</th>
<th>To display the current sound wave and the threshold value (parallel horizontal blue lines).</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Preview Pane</td>
<td>To preview the motion results responding to the settings you adjust.</td>
</tr>
<tr>
<td>3</td>
<td>Basic Tools</td>
<td><img src="image" alt="Load Current Actor &amp; Audio" />; Click this button to load the current actor and audio for adjustment and previewing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Load Sample Actor &amp; Audio" />; Click this button to load the embedded actor (Scientist) and audio for adjustment and previewing.</td>
</tr>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td><strong>Audio On/Off</strong>: Press up or down this button to preview with or without voice.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setting</strong></td>
<td>To determine the global behavior of the auto motions.</td>
<td></td>
</tr>
<tr>
<td><strong>Preview</strong></td>
<td>Click this button to play back in the preview pane.</td>
<td></td>
</tr>
<tr>
<td><strong>Apply</strong></td>
<td>Click this button to apply the motion to the current actor and its audio when you are satisfied with the motion result shown in the preview pane.</td>
<td></td>
</tr>
<tr>
<td><strong>Mode Indicator</strong></td>
<td>These labels indicate that the current actor has been applied a voice in <strong>Talk</strong> or <strong>Listen</strong> modes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reset</td>
<td>Resets all of the values of the settings in the <strong>Global</strong> and <strong>Parts</strong> tabs.</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>Sound Wave Display</td>
<td>Displays the current sound wave and the threshold value (parallel horizontal blue lines).</td>
</tr>
<tr>
<td>3</td>
<td>Preview Pane</td>
<td>Previews the motion results according to your setting adjustments.</td>
</tr>
</tbody>
</table>
| 4 | Basic Tools | **Open Profile**: Click this button to load a custom Auto Motion Settings profile (*.ct7AutoMotion).  
**Save Profile**: Click this button to save the current Auto Motion Settings as a profile (*.ct7AutoMotion).  
**Load Current Actor & Audio**: Click this button to load the current actor and audio for adjustment and previewing. |
<p>| 5 | <strong>Reaction Settings</strong> | Determines the global behavior of the auto motions. |
| 6 | <strong>Mode Settings</strong> | Use these two radio buttons to switch the current auto motion to talk or listen mode. |
| 7 | <strong>Motion Settings</strong> | Blends a motion clip into the current reactive auto motion generated with the settings in the panel. |
| 8 | <strong>Preview</strong> | Click this button to play back in the preview pane. |
| 9 | <strong>Apply</strong> | Click this button to apply the motion to the current actor and its audio when you are satisfied with the motion result shown in the preview pane. |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reset</td>
<td>Resets all the values of the settings in the <strong>Global</strong> and <strong>Parts</strong> tabs.</td>
</tr>
<tr>
<td>2</td>
<td>Sound Wave Display</td>
<td>Displays the current sound wave and the threshold value (parallel horizontal blue lines).</td>
</tr>
<tr>
<td>3</td>
<td>Preview Pane</td>
<td>Previews the motion results according to your adjusted settings.</td>
</tr>
</tbody>
</table>
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**Load Current Actor & Audio**: Click this button to load the current actor and audio for adjustment and previewing. |
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Load Sample Actor &amp; Audio:</strong> Click this button to load the embedded actor (Scientist) and audio for adjustment and previewing.</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Audio On/Off:</strong> Toggle this button to preview with or without voice.</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Candidate Parts</td>
<td>Click the facial features in this pane to adjust them further.</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Selected Part Name</td>
<td>Displays the name of the currently selected part.</td>
</tr>
<tr>
<td><strong>6</strong></td>
<td>Detail Settings (for Selected Part)</td>
<td>Drag the sliders to determine the moving direction and strength of the selected part.</td>
</tr>
<tr>
<td><strong>7</strong></td>
<td>Preview</td>
<td>Click this button to play back in the preview pane.</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td>Apply</td>
<td>Click this button to apply the motion to the current actor and its audio when you are satisfied with the motion result shown in the preview pane.</td>
</tr>
<tr>
<td><strong>9</strong></td>
<td>Anticipation / Follow-through</td>
<td>Set a value to determine whether the reaction motions occur before or after their corresponding peaks of the sound wave. A positive value means the motion will be delayed, while a negative value indicates the motion will occur early. Please note the unit is <strong>Frame</strong>.</td>
</tr>
<tr>
<td><strong>10</strong></td>
<td>Ping-pong Effect</td>
<td>Activate this box to create a back and forth movement pattern when the sound wave passes through the threshold.</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td>Mirror / Copy Settings</td>
<td>Copies or mirrors the motions for eyeballs and shoulders from one side to another. You can quickly set the same or opposite values to the other side of the select part by clicking one of these two buttons.</td>
</tr>
</tbody>
</table>
Auto Motion Settings - Global

Once the actor has auto motions (either default or applied from the library), you are then able to adjust the settings to fine-tune the motion for best results.

1. Make sure that your actor has been applied with a voice in Talk or Listen modes.

2. Click the Auto Motion Setting button on the tool bar.

3. Click the Preview button to play back.

4. Adjust the sliders in the Setting section to view the adjusted result.

5. Click the Apply button if you are satisfied with the result.
The **Strength** determines how rough the actor moves and how exaggerated the facial expressions are.

![Comparison of Strength 50 and 150](image)

**Strength** = 50  
**Strength** = 150

### Threshold

The **Threshold** defines a range for the actor not to move or show any expressions.

![Threshold Definition](image)

The threshold range is defined by two horizontal blue lines. Only the slopes and peaks of the audio wave line outside of the range can cause the actor to move and perform facial expressions.
Threshold

- **Threshold** = 50
- **Threshold** = 150

Four peaks outside of the threshold range drive the actor to perform different moves and expressions.

Only two peaks are left to drive the actor to move with facial expressions.

Smooth

The **Smooth** averages the bumpy or sensitivity of the motions generated by the voice amplitude; which is suitable for real-human, female, or gentle actors. When this setting works with spring, you need to turn down its value in order to show the spring effect.

Smooth = 0

Smooth = 100

Spring

The **Spring** determines the aftermaths (bouncing back and forth, and damping to stop) of a motion that is generated by a voice wave peak. Please note that the higher the **Strength** is, the more obvious the spring effect.
<table>
<thead>
<tr>
<th>Spring = 0</th>
<th>Spring = 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No aftermaths, the peak of the audio wave line drives the actor to move once.</td>
<td>Aftermaths of the peak causes more motion spring.</td>
</tr>
</tbody>
</table>
For Pro version, the **Auto Motion Settings** is divided into two tabs, **Global** and **Parts**; you may use the **Global** settings to determine the overall effect for the auto motion, and adjust the details for the specific body or facial parts of the auto motion in the **Parts** tab.

Please refer to the following sections to learn more about the extra settings in the **Global** tab.

As for the settings in the **Parts** tab, please refer to the **Auto Motion Settings - Parts** section.

- **In the Mode Settings Section**

  Mode Setting

  ![Mode Setting](image)

  Use these two radio buttons to switch the current auto motion to **talk or listen mode**.

- **In the Reaction Settings Section**

  **Sample Rate**

  The **Sample Rate** determines the sample times within specified frames from an
designated auto motion. The lower the value is, the higher the frequency sample will be for the motion, and vice versa.

Taking the movement of an actor as an example, a movement path is shown in the illustration below:

With a different sample rate, the total number of the keys grabbed from the original motion varies, which causes different results generated by difference in the number of keys.

<table>
<thead>
<tr>
<th>Sample Rate = 8 (frames/sampling time)</th>
<th>Sample Rate = 1 (frames/sampling time)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only four keys are sampled, which causes sharper angles along the path.</td>
<td>The movement conforms more closely to the original path.</td>
</tr>
</tbody>
</table>

**Smooth Style**

Under the **Smooth** slider, you can use a drop-down list to determine the smoothing method, including **Linear** (default), **Ease Out**, **Ease In** and **Curve**.

- **Linear**: This option results in a fixed speed for each peak of the sound wave.
- **Ease Out**: This method results in slightly slower movement following the peak of the sound wave.

- **Ease In**: This method results in a slow fade into the peak of the sound wave.

- **Curve**: This method results in a slow entrance into the peak as well as a gradual exit.

### Hard or Soft Spring

You can use the drop-down list under the *Spring* slider to determine the bouncing speed (amplitude of the vibration) of the spring effect.

- **Soft**: The bouncing speed is slower and looser.

- **Hard**: The bouncing speed is faster and tighter.
In the Motion Setting Section

Please refer to the Blending Motion Clip to Create Custom Auto Motion (for PRO only) section for more information.
When you use the **Auto Motion Settings** panel, you are actually creating a custom profile for the actor to respond to the sound. However, if you want to create a custom or special auto motion profile, then you can import a **Motion clip** and blend it into the original auto motion to quickly generate a custom auto motion profile.

### Blending a Motion Clip into an Auto Motion

1. Create a custom motion clip via **Facial Puppeteering** or **Face Key Editor** (for only) features.

2. Create a new project and add an actor. Apply a voice file to the actor in either **Talk** or **Listen** mode (in this example, the **Talk** mode is used).

3. Apply an **auto motion** template from the library.
4. Click the **Auto Motion Setting** button to open the panel and switch to the **Global** tab.

5. In the **Auto Motion Settings** panel, optionally click the **Load Current Actor & Audio** button to replace the default ones in the panel.

6. Click the **Preview** button to view the original auto motion.

7. In the **Motion Settings** section, click the **Open Motion File** button to load the motion file created in step 1.
8. Click the Preview button to view the blending result - the custom motion will be blend into the original auto motion.

- Drag the Motion Strength slider to determine the extent that the motion clip affects the original auto motion.
- Activate or deactivate the Blend Motion box to temporarily view the motion with or
without the motion clip blended in.

- Click the **Delete Motion** button to remove the loaded motion clip.

9. Click the **Apply** button to apply the modified auto motion profile to the current voice if you are satisfied with the blending result.
# Auto Motion Settings - Parts

In the **Global** tab of the **Auto Motion Setting** panel, you are able to set the entire motion performing behavior. However, if you want to dramatize or tranquilize the motions of specific parts (such as the facial features, the position and so on) of the actor, then you can individually set the level of the reaction of the parts to the voice.

<table>
<thead>
<tr>
<th>Dramatizing Parts Movements of Actor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Make sure that your actor has been <a href="#">applied with a voice in Talk or Listen modes</a>.</td>
</tr>
<tr>
<td><img src="image" alt="Actor Image" /></td>
</tr>
<tr>
<td>Please note that you may optionally <a href="#">apply any auto motion template</a> from the Auto Motion library to change to an ideal motion in responding to the voice.</td>
</tr>
<tr>
<td>2. Click the <strong>Auto Motion Setting</strong> button on the tool bar.</td>
</tr>
<tr>
<td>3. Switch to the <strong>Parts</strong> tab.</td>
</tr>
</tbody>
</table>
4. Select a specific part of which the motions you want to dramatize (in this case, the head is selected).
5. Adjust the sliders that belong to the part (in this case, the head is designated to react right and backward in responding to the voice, which create a leaning backward motion).

6. Repeat steps 4 and 5 to other parts for further adjustments.

7. Click the Preview button to play back and view the motion in the preview pane of this panel in advance.

8. Click the Apply button if you are satisfied with the result.

The disdaining attitude is intensified.

Note:
You are able to switch back and forth between the Global and Parts tabs to retouch the motion.
Parts Movements for Auto Motion Settings Panel

When using the Auto Motion Settings panel to enhance or weaken the movement of a part, you may adjust the various parameter sliders that belong to each individual part.

Types of Sliders

The sliders are divided into two categories:

- **Strength**: Sliders of this kind can only determine the strength of the selected parts that have single direction movement, such as the Closing of the Upper and Lower Eyelids, the Wrinkling of the Nose, the Lifting of the Nose Wings (Alae), and the Lowering of the Jaw. The value is from 0 to 100.

  Take the Jaw for example:

  ![Jaw Sliders](image)

  \[
  \text{Strength} = 20 \quad \text{Strength} = 80
  \]

- **Strength and Direction**: These sliders can determine not only the strength but also the direction of the selected parts that are able to move or rotate in dual directions. Any slider that doesn't match the description of the previous type is recognized as this type of slider. The value is from -100 to 100.

  - Negative value: A negative value causes the selected parts to move Left, Down, Back or rotate Counterclockwise.

  Take the Head for example:
Positive value: A positive value means the selected parts will move Right, Up, Front or rotating Clockwise.

Take the Head for example:
With a combination of facial muscle animations, you can create thousands of expressions by setting the individual values of the sliders.

### Parts for Facial Expressions

You may select these parts for adjusting the parameters for the facial expressions.

#### A - Forehead:
Adjusts the individual angles of the eyebrows on the forehead.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Raise Left Outer/Inner</th>
<th>Raise Left Outer/Inner</th>
<th>Raise Right Outer/Inner</th>
<th>Raise Right Outer/Inner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sad</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
</tr>
<tr>
<td>Suspicious</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
</tr>
<tr>
<td>Angry</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
</tr>
<tr>
<td>Suspicious</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
<td>[100]</td>
</tr>
</tbody>
</table>

#### B - Eyebrows:
Adjusts the individual vertical heights of the eyebrows.
C - Upper Eyelids: Adjusts the individual open/close level of the upper eyelids.

D - Lower Eyelids: Adjusts the individual open/close level of the lower eyelids.
E - Eyeball Horizontal Movement

- Left/Right: Searching Right
- Left/Right: Searching Left

E - Eyeball Vertical Movement

- Down/Up: Evasive
- Down/Up: Apologetic

E - Iris Enlarging

- Narrow/Larger: Naive
- Narrow/Larger: Shocked

F - Eyeball Rotating Start Position

- Off Center: Anxious
- Off Center: Anxious

F - Eyeball Rotating Direction and Speed

- Movement CCW/CW: Anxious
- Movement CDW/CW: Anxious
**G - Nose Wings (Alae):** Adjusts the individual raising level of the nostrils.

<table>
<thead>
<tr>
<th></th>
<th>Left Nose</th>
<th>Right Nose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disdainful</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Denying</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Disdainful</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

**G - Wrinkle Nose**

<table>
<thead>
<tr>
<th></th>
<th>Wrinkle Nose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Annoyed</td>
<td></td>
</tr>
</tbody>
</table>
### H - Cheeks

Adjusts the individual raising or dropping level of the cheeks.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise/Drop Left Lip Edge</td>
<td>100</td>
</tr>
<tr>
<td>Raise/Drop Right Lip Edge</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Happy

- Raise/Drop Left Lip Edge: +100
- Raise/Drop Right Lip Edge: +100

#### Depreciatory

- Raise/Drop Left Lip Edge: -100
- Raise/Drop Right Lip Edge: -100

#### Sad

- Raise/Drop Left Lip Edge: -100
- Raise/Drop Right Lip Edge: -100

#### Depreciatory

- Raise/Drop Left Lip Edge: +100
- Raise/Drop Right Lip Edge: +100

### I - Flatten or Funnel Lips

Consider the lips as they flatten or funnel.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flatten/Funnel</td>
<td>100</td>
</tr>
<tr>
<td>Flatten/Funnel</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Considering

- Flatten/Funnel: +100

#### Approving

- Flatten/Funnel: +100

#### Objecting

- Flatten/Funnel: -100

#### Unwilling

- Flatten/Funnel: -100

### I - Sip or Pucker Lips

Make the lips gradually extend or draw together.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sip/Pucker</td>
<td>100</td>
</tr>
<tr>
<td>Sip/Pucker</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Considering

- Sip/Pucker: +100

#### Approving

- Sip/Pucker: +100

#### Objecting

- Sip/Pucker: -100

#### Unwilling

- Sip/Pucker: -100

### J - Jaw Down

Move the jaw down.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move Down</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Move Down

- Move Down: +100

### J - Jaw Left / Right

Move the jaw left or right.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move Left/Right</td>
<td>100</td>
</tr>
<tr>
<td>Move Left/Right</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Move Left/Right

- Move Left/Right: +100
- Move Left/Right: +100

- Move Left/Right: -100

- Move Left/Right: -100
Upper Body Movement - Head, Shoulders and Body

Select the **Shoulders**, **Head** and **Body** parts to synchronize character body animations along with the voice.

<table>
<thead>
<tr>
<th>A - Shoulder Horizontal Movement</th>
<th>A - Shoulder Vertical Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Shoulder Horizontal Movement" /></td>
<td><img src="image" alt="Shoulder Vertical Movement" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A - Shoulder Back/Front</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Shoulder Back/Front" /></td>
</tr>
</tbody>
</table>
B - Actor Horizontal Movement

B - Actor Vertical Movement

B - Actor Back/Front

C - Actor Rotate
<table>
<thead>
<tr>
<th>D - Head Horizontal Movement</th>
<th>D - Head Vertical Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Head Horizontal Movement" /></td>
<td><img src="image2" alt="Head Vertical Movement" /></td>
</tr>
<tr>
<td><img src="image3" alt="Left/Right" /></td>
<td><img src="image4" alt="Down/Up" /></td>
</tr>
<tr>
<td><img src="image5" alt="100" /></td>
<td><img src="image6" alt="100" /></td>
</tr>
<tr>
<td><img src="image7" alt="Left/Right" /></td>
<td><img src="image8" alt="Down/Up" /></td>
</tr>
<tr>
<td><img src="image9" alt="100" /></td>
<td><img src="image10" alt="100" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D - Head Back/Front</th>
<th>E - Head Rotates Right/Left</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image11" alt="Head Back/Front" /></td>
<td><img src="image12" alt="Head Rotates Right/Left" /></td>
</tr>
<tr>
<td><img src="image13" alt="Back/Front" /></td>
<td><img src="image14" alt="100" /></td>
</tr>
<tr>
<td><img src="image15" alt="100" /></td>
<td><img src="image16" alt="Left/Right" /></td>
</tr>
<tr>
<td><img src="image17" alt="Back/Front" /></td>
<td><img src="image18" alt="100" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E - Head Rotates Up/Down</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image19" alt="Head Rotates Up/Down" /></td>
</tr>
</tbody>
</table>
E - Head Swings Clockwise/Counterclockwise
Offsetting Part Motion

By offsetting the part motion, you can alter the combinations of the originally synchronized motions to something that isn't synchronized. This can help you create more realistic and random movements for your actor.

### Offsetting Motions of a Single Part (Head Only)

In the following example, you will see how to offset the motions of a specific part to generate a waving-right head motion to the music.

1. Make sure that your actor has been applied with a voice in Talk or Listen modes.

2. Click the Auto Motion Setting button on the tool bar to display the panel.

3. Click the Reset button to return to the default settings which will remove the actor's reaction to the audio.

4. Switch to the Parts tab and select the Head Rotate button.
5. Adjust the parameter value for the **Head Rotate** (the higher the value, the stronger the head rotates):

- **Swing (CCW/CW)**: Increase the value to make the head tilt right.

6. Select the **Head Move** button.
7. Adjust the settings for the **Head Move**:

- **Down/Up**: Decrease the value to make the head move down.
- **Left/Right**: Increase the value to make the head move right.

The actor's head move in a linear fashion and rotate to the bottom right at the same time.
Note:
Please refer to the Parts Movements for Auto Motion Settings Panel section for more information about the relationship between the movements and the sliders.

8. Increase the Offset value in the numeric field besides the Left/Right slider.

The Theory of Offsetting

The auto motion is auto-generated in accordance with the settings in the Auto Motion Settings panel. Essentially, motions merely react to the peaks of the sound wave (The higher the peak is, the stronger the motions are).
However, sometimes you may need the motion to be anticipated, or follow-through so that the reaction motions from each part of the actor can happen at different times. The purpose for this is to generate the sensation of an irregular motion that doesn't seem as mechanical and artificial.

9. To make the head motion more vivid, adjust the Head Rotate parameters:

- **Down/Up**: Decrease the value to make the head rotate down.
- **Left/Right**: Increase the value to make the head rotate right; also add the **Offset** value to make the head start to rotate right a little bit later.

10. Click the **Preview** button to play back and view the motion in the preview pane of this panel in advance.

* Please note that you can adjust the value during the preview playback to see the real-time result before applying.

11. Click the **Apply** button if you are satisfied with the result.

---

**Follow-through Effect for Different Parts (Head, Shoulders and Body)**

The example in the previous section may appear a little stiff due to the fact that the actor is only moving its head. By using the **Offset** (follow-through) effect, you can set the shoulders and body to move at a different time than the head, which creates a nice wave movement style starting from the head to the body.

**Shoulders Movements**

1. The actor from the previous section merely waves its head.
2. Click the **Auto Motion Setting** button on the tool bar to display the panel.

3. Switch to the **Parts** tab and select the **Left Shoulder** part.

4. Adjust the parameter values for the **Left Shoulder**:

   - **Left/Right**: Decrease the value to make the shoulder move left; also increase the **Offset** value to make the shoulder start to move left a little bit later.

   - **Down/Up**: Decrease the value to make the shoulder move down; also increase the
**Offset** value to make the shoulder start to move down a little bit later.

- **Back/Front**: Decrease the value to make the shoulder move backward.

5. Select the **Right Shoulder** part.

6. Adjust the parameter values for the **Right Shoulder**:

   - **Left/Right**: Increase the value to make the shoulder move right; also increase the **Offset** value to make the shoulder start to move right a little bit later.
Body Movements

In order to make the actor more lively, the body also auto moves according to the voice.

1. Select the **Body Move** button.

2. Adjust the parameter values for the **Body Move**:
1. **Down/Up**: Decrease the value to make the body squash and bounce; also increase the **Offset** value to make the body start to squash a little bit later.

2. **Left/Right**: Increase the value to make the body move right; also add the **Offset** value to make the body start to move a little bit later than the head.

---

**Note:**

Please refer to the [Parts Movements for Auto Motion Settings Panel](#) section for more information about the relationship between the movements and the sliders.

---

3. Click the **Preview** button to play back and view the motion in the preview pane of this panel in advance.

   * Please note that you can adjust the value during the preview playback to see the real-time result before applying.

4. Click the **Apply** button if you are satisfied with the result.
**Mixing Anticipation and Follow-through Skills (Facial Expression)**

Although the motion of the head and body in the previous example appears more vigorous, the expression on the actor's face doesn't really express that he's happily dancing along to the music. By using the anticipation skill, you are able to set the auto motion to occur earlier than the voice to make the animation even more dynamic.

**Anticipation**

1. The actor from the previous section moves without facial expressions.

2. Click the **Auto Motion Setting** button on the tool bar to display the panel.

3. Select the **Upper Eyelids** part.

4. Adjust the settings for the **Upper Eyelids**:
o **(L) Close Eye**: Increase the value to make the left upper eyelid close.

o **(R) Close Eye**: Increase the value to make the right upper eyelid close.

When the actor's head moves to the right, the upper eyelids closed. However, the eyes will be wide open when it comes to the strong beats.

---

**Note:**

Please refer to the Parts Movements for Auto Motion Settings Panel section for more information about the relationship between the movements and the sliders.

5. Decrease the Offset to negative values in the numeric fields beside the **(L) Close Eye** and **(R) Close Eye** sliders.
This step advances the upper eyelids closing motion, which cause the actor close the upper eyelids before it starts to move to the right (unit: frame).

6. With the same concept, individually select the Lower Eyelids and Cheeks.

7. Adjust the parameter values for the Lower Eyelids and Cheeks to generate a cheerful smile when it comes to the weaker beats of the voice:
(L) Raise Lid, (R) Raise Lid: Increase the values to make the lower lids raise; also decrease the Offset values to make the raising motions start a little bit earlier than the strong beats.

(L) Droop/Raise Edge, (R) Droop/Raise Edge: Increase the values to make the cheeks raise; also decrease the Offset values to make the raising motions start a little bit earlier than the strong beats.

**Follow-through**

When it comes to the strong beats of the voice, the actor’s expressions are ideally to be set to the strongest. Therefore, by setting the parameter values of the facial features, combining with the Offset values, the actor can have a smile for the weaker beats and a joyful expression for the stronger beats.

1. Select the **Eyebrows** part.
2. Adjust the parameter values for the **Eyebrows**:

![Eyebrows control panel](image)

- **(L) Raise/Lower Brow, (R) Raise/Lower Brow**: Increase the values to make the brows raise; also add the **Offset** values to make the brows raise to the stronger beats.

![Eyebrows animation](image)

3. With the same concept, individually select the **Left Eyeball, Right Eyeball** and **Jaw** parts.
4. Adjust the parameter values for the **Left** and **Right Eyeballs** and **Jaw** to generate a happy appearance when it comes to the stronger beats of the voice:

<table>
<thead>
<tr>
<th>Right Eyeball</th>
<th>Jaw</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Left Eyeball</strong></td>
<td></td>
</tr>
<tr>
<td>Left / Right</td>
<td>80</td>
</tr>
<tr>
<td>Down / Up</td>
<td>0</td>
</tr>
<tr>
<td>Shrink/Enlarge Iris</td>
<td>0</td>
</tr>
</tbody>
</table>

(Same settings for the left and right eyeballs) **Left/Right**: Increase the values to make the eyeballs look to the right at the stronger beats.

**Move Down, Move Left/Right**: Increase the values to make the jaw move down and to the right; also add the **Offset** values to make the motions start a little bit later for the strong beats.
Note:
Please note that you can adjust the settings in the Global tab if the motion result is too weak or strong (in this case, the Smooth value is increased).

5. Click the **Preview** button to play back and view the motion in the preview pane of this panel in advance.
   * Please note that you can adjust the value during the preview playback to see the real-time result before applying.

6. Click the **Apply** button if you are satisfied with the result.
Pingpong Movements

In the Parts tab of the Auto Motion Settings panel, the settings which have negative or positive values only make the actor perform the motions to single side or rotating direction. However, if you need the motions to move or rotate in two opposite directions, then you can apply to the Pingpong feature.

Using the Pingpong Feature

1. Create a new project and add an actor. Apply a voice file to the actor in either Talk or Listen mode (in this example, the Listen mode is taken and the parts have been set to be voice-motivated).

The settings for the parts will only let the actor's head rotate to the right, the right shoulder raise up and the left shoulder lower down.

2. Click the Auto Motion Setting button to open the panel and switch to the Parts tab.

3. Select the Head Rotate button.
4. Activate the **Pingpong** box of the **Swing (CCW/CW)**.

This step ensures the head is able to rotate in dual directions.

After activating the box, the head is able to rotate in dual directions. However, the shoulder movement remains in a single direction.
The Theory of Pingpong

Before activating the **Pingpong** box, the motions remain in the same quadrant or direction without running over to the opposite one when it comes to the peak of the voice wave. Please refer to the Parts Movements for Auto Motion Settings Panel section for more information.

After the **Pingpong** box is activated, the motions are able to run over to the other quadrant or direction when the sound wave passes through the **threshold**.

- **Positive** values + **Pingpong**:
  - **Horizontal Movements**: The part moves to the right, returns to the initial position and then moves to the left.
  - **Vertical Movements**: The part moves up, returns to the initial position and then moves down.
  - **Front/Back Movements**: The part moves forward, returns to the initial position and then moves backward.
  - **Rotate**: The part rotates clockwise, returns to the initial direction and then rotates counterclockwise.
  - **Scale**: The part enlarges, re-scales to the initial size and then shrinks.

- **Negative** values + **Pingpong**:
  - **Horizontal Movements**: The part moves to the left, returns to the initial position and then moves to the right.
  - **Vertical Movements**: The part moves down, returns to the initial position and then moves up.
  - **Front/Back Movements**: The part moves backward, returns to the initial position and then moves forward.
  - **Rotate**: The part rotates counterclockwise, returns to the initial direction and then rotates clockwise.
  - **Scale**: The part shrinks, re-scales to the initial size and then enlarges.
5. With the same concept, individually select the **Left Shoulder** and **Right Shoulder**.

6. Activate the **Pingpong** boxes of the **Down/Up** parameters for the **Shoulders** to allow them to move up and down in opposite directions:

![Shoulder Parameters](image)

7. Click the **Apply** button to apply the modified auto motion profile.
Mirroring or Copying Values

The parameter values for the Eyeballs (move and rotate) and the Shoulders can be copied to each other so that you do not need to manually set them one by one when you need them to have a same or opposite motion patterns.

Mirroring the Parameter Values for Eyeballs

1. Apply an actor with fainting motion without any eye movements.

The actor is shivering while talking. However, the eyeballs are not moving at all.

2. Click the Auto Motion Setting button to open the panel and switch to the Parts tab.

3. Select the Right Eye Rotate part.
4. Set the parameter values.

This step ensures that the right eyeball will rotate as the actor talks.

Activate the box and the right eyeball rotates clockwise as the actor talks.

5. Instead of remembering the values for the entire settings of the **Right Eyeball** and manually setting the opposite values for the **Left Eyeball**, simply click the **Mirror** button and values from the right eyeball are reversed and copied to the other one.
Note:
Please note that the Offset and Pingpong values will be copied without being reversed.

6. Click the Apply button to apply the modified auto motion profile.

**Copying the Parameter Values for Shoulders**

1. Apply an actor with a laughing motion without any shoulders movements.

The actor is laughing without shoulder movements.
2. Click the Auto Motion Setting button to open the panel and switch to the Parts tab.

3. Select the Right Shoulder part.

4. Set the parameter values.

   ![Parameter values](image1)

   This step ensures the right shoulder will move up and down as the actor laughs.

   ![Movement example](image2)
Activate the box and the right shoulder is able to move up and down.

5. Instead of remembering the values for the entire settings of the Right Shoulder and manually setting the same values for the Left Shoulder, simply click the Copy button and values from the right shoulder are copied to the other one.

6. Click the Apply button to apply the modified auto motion profile.
Adding Motion Clips from the Library

After applying an Auto Motion to the actor, you are then able to overlap the actor's motion at certain times with ready Motion Clips from the library. Thus the actor can have emotional changes at different times in accordance to the context of its voice.

Applying Motion Clips from the Library

1. Add a voice to the actor and use the default auto motion or apply a desired auto motion from the library.

The actor is applied with a template from the Auto Motion library.

2. Go to the time frame where you want the actor to have different facial expressions or movements.
3. In the **Content Manager**, switch to the **Motion Clip** tab. You will see motion clip templates in the library.

![Content Manager](image)

**Note:**

Please note that the last two steps equal to drag and drop the template from the library to the **Motion Clip** track of the **Timeline**.

![Timeline](image)

4. Apply one of the templates to overlap the current motion of the actor.

![Actor](image)

Apply the motion clip "**Yes**" for nodding the
Note:

Please note that the lengths of the motion clips in the library are individually fixed. They can be longer or shorter than the voice of the actor.

Emotional Changes

By applying various motion clips in different timeframes, the actor can have emotional changes.

1. Follow the steps described in the previous section to overlap a motion clip to the auto motion.

   Apply the motion clip "Yes" for nodding the head.

2. Go to another time frame where you want the actor to change its emotion.

3. You may access the Motion Clip >> Emotions or Motion Clip >> Movements libraries in the Content Manager.
4. Apply the desired template from the library to overlap the auto motion.

5. Play back to view the emotional changes of the actor.

Two motion clips are applied in different time frames to change the actor's motions.

6. You may open the **Timeline** to view the clip status in the **Auto Motion** and **Motion Clip** tracks.

<table>
<thead>
<tr>
<th>Motion Clip</th>
<th>Yes_01</th>
<th>Silly smile_01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Motion</td>
<td>Flirting (Auto Motion)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
If you want to **blend motion clips** instead of overlapping the auto motion, then please refer to the [Blending Motion Clips with Face Puppet Panel](#) section for more information.
By layering unique facial expressions to an auto motion project, the Face Puppet tool gives you the freedom to add any specific facial feature animations including blinking of the eyes, a slight smile, or creating a full-face expression for your actor.

**Blending Facial Expressions from the Library**

1. Make sure the actor has been applied with a voice with either idle or auto motion.

2. Go to the time frame where you want to blend custom facial expressions to the existing motion.

3. Click the Face Puppet button on the tool bar.
4. Make sure that the **Blend data on next recording** checkbox is activated.

5. Use the [Full Face Control Puppeteering](#) method; or alternatively, use the [Solo Feature Selection Puppeteering](#) methods to record and blend a new facial expression.

6. Repeat the steps to do the **multi-layer recording**.
7. After the recording, the entire motion clip replaces the auto motion in a duration. The result in the motion clip takes effect even if you apply any other auto motion to the actor.

Note:
Please also refer to the following sections for more information:

- Introducing Face Puppet Panel
- Recording Blinking
- Creating Custom Puppet Profiles
Introducing the Face Puppet Panel

1. **Open and Save Profile**
   - Click these two buttons to load and save profiles.

2. **Face Animation Profile**
   - Select one of the built-in profiles from the list. Each profile contains various expressions.

3. **Full Face Control**
   - Select one of the expressions, with pre-defined weight settings, for varying facial features.

4. **Preview**
   - (Space bar) Click this button and then press the **Space bar** to preview the expressions triggered by your input device (Mouse by default).

5. **Record**
   - (Windows: Ctrl + Space bar)
   - (Mac: Option + Space bar) Click this button and then press **Space bar** to start recording a motion clip. Press the **Enter key** to start the half-speed recording mode. Keys will then be automatically inserted into the timeline when you move your mouse to drive motion expressions during recording.

6. **Solo Feature Selection**
   - Select to change any desired features. The changes will automatically be converted into keys during recording.

7. **Clear Selection**
   - Deselect any highlighted features.

8. **Puppet Head**
   - Select this to change the rotation/tilt of the head. The changes will automatically be converted into keys during recording.

9. **Advance**
   - Adjust the weight of a feature, in detail, with movements from your
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>input device (Mouse by default).</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td><strong>Blend data on next recording</strong></td>
<td>Activate this check box so that the new motions of the selected features are blended into existing keys after recording.</td>
</tr>
</tbody>
</table>
Full Face Control Puppeteering

The Full Face control Puppeteering uses presets for puppeteering and recording expressions.

Using Full Face Control Puppeteering

1. Make sure the actor has been applied with a voice with either idle or auto motion.

2. Go to the time frame where you want to blend custom facial expressions to the existing motion.

3. Click the Face Puppet button on the tool bar.
4. Pick a desired profile from the **Face Animation Profile** list.

5. Choose a preset in the **Full Face Control** list.

**Note:**

- The full face profiles give you a matching personality with a unique animation style.
- It is highly recommended that you use the first two, **1_Chuck** and **2_Gwynn**, profiles for the actor with real human face in order to get higher realism, gentle animations; the rest are for cartoon characters with more exaggerative animations.

6. You may need to preview the animations before the real recording. There are two methods to doing so:

**Standard Method:**
• Click the Preview button.

• Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

• Press the Space Bar to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**

• Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

• Press the Space Bar to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
7. Move your mouse to puppet. The selected facial features will then be triggered to move with the mouse cursor. Press the **Space bar** again to stop previewing.

8. If you are satisfied with the results in the preview mode, then you may start to record with two methods:

**Standard Method:**

- Click the **Record** button.
- Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.
- Press the **Space Bar** to start previewing (Press the **Enter key** to start the half-speed recording mode). A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**
- Move your mouse cursor to the center of your display so that you have enough space to move mouse up, down, left and right for puppeteering.

- Press the Ctrl + Space Bar for Windows or Option + Space Bar for Mac to start recording. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

9. Move your mouse to puppet. The animations will then be recorded into a clip. Press the Space bar again to stop recording.

10. Once the recording stops, a motion clip with the entire recorded expression will be stored in the Motion Track.
Solo Feature Selection Pane and Facial Muscles

When using the Face Puppet Panel, the mouse cursor directions are mainly Mouse Move Up and Mouse Move Down which can trigger different facial muscles in the same directions.

With a combination of facial muscle animations, you can create thousands of expressions by simply moving your mouse around.

<table>
<thead>
<tr>
<th>Bilateral Facial Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Forehead</td>
</tr>
<tr>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Sad</td>
</tr>
<tr>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Anger</td>
</tr>
<tr>
<td>B. Both Eyebrows</td>
</tr>
<tr>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Surprised</td>
</tr>
<tr>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Suspicious</td>
</tr>
<tr>
<td>C. Both Eyelids</td>
</tr>
<tr>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Shocked</td>
</tr>
<tr>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Tired</td>
</tr>
<tr>
<td>D. Both Cheeks</td>
</tr>
<tr>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Smiling</td>
</tr>
<tr>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Upset</td>
</tr>
<tr>
<td>E. Mouth Shape</td>
</tr>
<tr>
<td>F. Jaw Bone</td>
</tr>
</tbody>
</table>
Mouse moves up
Pouting

Mouse moves down
Lips-biting

Mouse moves up
Jaw up

Mouse moves down
Jaw Down
### Unilateral Facial Features

<table>
<thead>
<tr>
<th>A. Eyebrow</th>
<th>B. Upper Eyelid</th>
<th>C. Eyeball</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse moves up</td>
<td>Mouse moves down</td>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Surprised</td>
<td>Indifferent</td>
<td>Shocked</td>
</tr>
<tr>
<td>Mouse moves down</td>
<td>Mouse moves down</td>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Indifferent</td>
<td>Sleepy</td>
<td>Sleepy</td>
</tr>
<tr>
<td>Eyeball rolling</td>
<td>Eyeball rolling</td>
<td>Eyeball rolling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Lower Eyelid</th>
<th>E. Ala</th>
<th>F. Cheek</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse moves up</td>
<td>Mouse moves down</td>
<td>Mouse moves up</td>
</tr>
<tr>
<td>Suspicious</td>
<td>Disgusted</td>
<td>Admitting</td>
</tr>
<tr>
<td>Mouse moves down</td>
<td>Mouse moves down</td>
<td>Mouse moves down</td>
</tr>
<tr>
<td>Disgusted</td>
<td>Admitting</td>
<td>Smiling</td>
</tr>
<tr>
<td>Admitting</td>
<td>Smiling</td>
<td>Sad</td>
</tr>
</tbody>
</table>
Multiple Facial Features

A. Nose, Forehead, Cheeks and Mouth

<table>
<thead>
<tr>
<th>Mouse moves up</th>
<th>Mouse moves down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm</td>
<td>Threatening</td>
</tr>
</tbody>
</table>
Solo Feature Selection Puppeteering

When you do not wish to use puppeteering presets, and you wish to record the expressions of a single facial feature, then you can use the **Solo Feature Selection** pane for puppeteering.

### Using Solo Feature Selection Puppeteering

1. Make sure the actor has been *applied with a voice* with either *idle* or *auto motion*.

The actor has applied with voice and auto motion

2. Go to the time frame where you want to blend custom facial expressions to the existing motion.

3. Click the **Face Puppet** button on the tool bar.
4. Click the **Clear Selection** button.

All the selected features will be deselected.

5. Pick the desired facial features from the **Solo Feature Selection** pane.
Note:
Press the buttons (3D Movement and Rotate Head) of the Head Movement to puppet the head for rolling or tilting.

6. You may need to preview the animations before the real recording. There are two methods to doing so:

**Standard Method:**

.i. Click the **Preview** button.

.ii. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.iii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
7. Move your mouse to puppet. The selected facial features will be triggered to move with the mouse cursor. Press the **Space bar** again to stop previewing.

8. If you are satisfied with the results in the preview mode, then you may start to record with two methods:

**Standard Method:**

.i. Click the **Record** button.

.ii. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.iii. Press the **Space Bar** to start previewing (Press the **Enter key** to start the half-speed recording mode). A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
Shortcut Method:

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the Ctrl + Space Bar for Windows or Option + Space Bar for Mac to start recording. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

9. Move your mouse to puppet. The animations will be recorded into a clip. Press the Space bar again to stop recording.

8. Once the recording stops, a motion clip with the entire recorded expressions will be stored in the Motion Track.

Note:
Please also refer to the Multi-Layer Recording section for more information.
Multi-Layer Recording

When you follow the instructions in the Solo Feature Selection Puppeteering section, then you are generating a facial clip expression at one time. However, you may also apply the multi-layer recording method to individually record the feature motions.

Using Solo Feature Selection Puppeteering

1. Launch the Face Puppet Panel.

2. Make sure that the Blend data on next recording is activated in order to perform the multi-layer recording.

3. Go to a timeframe where you want to start puppeteering.
4. Select one feature and record the puppeteering result as a clip. Please refer to the Solo Feature Selection Puppeteering section for more information.

5. Go to the timeframe specified in Step 3.

6. Click the Clear Selection button and select another facial feature in the pane.

7. Start to puppet and record the motion of this selected facial feature.
When you stop recording, the motion of the selected feature will be layered into the previous facial motion clip.

8. Repeat Steps 4 to 7 until you are satisfied with the actor's expression results. Each recording will blend, layer by layer, the effects to the motion clip.
Recording Blinking

You may use the **Face Puppet** panel to make the actor blink at any time by clicking.

### Mouse Clicking During Recording

1. Following features can be used to control blinking.

<table>
<thead>
<tr>
<th>Blink Both Eyes</th>
<th>Blink Left Eye</th>
<th>Blink Right Eye</th>
</tr>
</thead>
</table>
   ![Blink Both Eyes](image1.png) | ![Blink Left Eye](image2.png) | ![Blink Right Eye](image3.png) |

2. You may need to preview the animations before the real recording. There are two methods to doing so:

   **Standard Method:**

   .i. Click the **Preview** button.

   .ii. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

   .iii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
Shortcut Method:

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

3. Click your left-mouse button to blink accordingly.

4. If you are satisfied with the results in the preview mode, then you may start to record with two methods:

   **Standard Method:**
.i. Click the Record button.

.ii. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.iii. Press the Space Bar to start previewing (Press the Enter key to start the half-speed recording mode). A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the Ctrl + Space Bar for Windows or Option + Space Bar for Mac to start recording. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
5. The blinking of the eyes will be blended into the motion clip once the recording finishes.

# Dragging for Blinking Speed and Duration

If you do not want the actor to blink quickly, then you may use the dragging method to determine the time length for blinks.

1. Select the facial features that control the eyelids.

<table>
<thead>
<tr>
<th>Blink Both Eyes</th>
<th><img src="image" alt="Blink Both Eyes" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blink Left Eye</td>
<td><img src="image" alt="Blink Left Eye" /></td>
</tr>
<tr>
<td>Blink Right Eye</td>
<td><img src="image" alt="Blink Right Eye" /></td>
</tr>
</tbody>
</table>

2. Start to preview or record.

**Previewing**

<table>
<thead>
<tr>
<th>Standard Method:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
.i. Click the **Preview** button.

.ii. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.iii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Recording**
### Standard Method:

1. Click the **Record** button.
2. Move your mouse cursor to the center of your display so that you have enough space to move mouse up, down, left and right for puppeteering.
3. Press the **Space Bar** to start previewing (Press the **Enter key** to start the half-speed recording mode). A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

![Crosshair](image.png)

### Shortcut Method:

1. Move your mouse cursor to the center of your display so that you have enough space to move mouse up, down, left and right for puppeteering.
2. Press the **Ctrl + Space Bar** for **Windows** or **Option + Space Bar** for **Mac** to start recording. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
3. Move your mouse up or down to determine the speed for the eyes to blink. You may then fully control the eyelids.

Move down to half close
Move down to full close
Creating Custom Puppet Profiles

Create your own, unique puppet profiles or modify existing profiles with the Advanced pane.

Creating and Saving Custom Profiles

1. Click the Clear Selection button to deselect all features.

2. Pick the desired features in the Solo Feature Selection pane.

3. You may need to preview the animations before saving them as a custom profile. There are two methods to doing this:

   **Standard Method:**
   
   .i. Click the Preview button.
   .ii. Move your mouse cursor to the center of your display so that you can have enough space to move the mouse up, down, left and right for puppeteering.
.iii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

**Shortcut Method:**

.i. Move your mouse cursor to the center of your display so that you can have enough space to move the mouse up, down, left and right for puppeteering.

.ii. Press the **Space Bar** to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

4. If you are satisfied with the results, then click the **Save Puppet Profile** button to save your custom profile.
Adjusting Weight

To customize your own puppet control profile, then you may need to manually adjust the weight of each feature.

1. Pick the desired features in the **Solo Feature Selection** pane.

2. Click the **Advance Setting** button to expand the weight pane.

3. Modify the values in the **Weight** column, of the corresponding feature, to specify the weight movements triggered by your mouse.

<table>
<thead>
<tr>
<th>Facial</th>
<th>Feature</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>Right Lower Lid</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Wrinkling Nose</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Left Nose</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Right Nose</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Raise/Droop Lip</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sip Lip</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Left Cheek</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Right Cheek</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Jaw</td>
<td>100</td>
</tr>
<tr>
<td>Eyes</td>
<td>Left X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Left Y</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Right X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Right Y</td>
<td>0</td>
</tr>
</tbody>
</table>

4. You may need to preview the animations before saving them as a custom profile. There are two methods to doing so:
Standard Method:

.i. Click the Preview button.

.ii. Move your mouse cursor to the center of your display so that you have enough space to move mouse up, down, left and right for puppeteering.

.iii. Press the Space Bar to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.

Shortcut Method:

.i. Move your mouse cursor to the center of your display so that you can have enough space to move mouse up, down, left and right for puppeteering.

.ii. Press the Space Bar to start previewing. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.
5. Repeat Steps 3 and 4 until you obtain satisfying results.

6. If you are satisfied with the results, then click the **Save Puppet Profile** button to save your custom profile.
Introducing the Timeline

Click the Timeline button on the play bar to open the Timeline Editor.

The Timeline Editor is where you edit animation layers and clips for an actor.
### A. Audio Editing Tools

<table>
<thead>
<tr>
<th></th>
<th>Audio Editing Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Voice Morph</strong></td>
</tr>
<tr>
<td></td>
<td>Click to invoke the <strong>Voice Morph</strong> panel to apply artificial voice effects to the original voice.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Background Music</strong></td>
</tr>
<tr>
<td></td>
<td>Click to invoke the <strong>Background Music Setting</strong> panel to add background music to the project.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Lips Sync</strong></td>
</tr>
<tr>
<td></td>
<td>Click to invoke the <strong>Lips Sync</strong> panel to apply lip synchronization and adjust the lip movements.</td>
</tr>
<tr>
<td>4</td>
<td><strong>PRO Face Key Editor</strong></td>
</tr>
<tr>
<td></td>
<td>Click to open the <strong>Face Key Editor</strong> panel. Please refer to the <strong>Using the Face Key Editor</strong> section for more information.</td>
</tr>
</tbody>
</table>

### B. Clip Editing Tools

<table>
<thead>
<tr>
<th></th>
<th>Clip Editing Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Function</strong></td>
</tr>
<tr>
<td></td>
<td>Click to show the clip editing drop-down list.</td>
</tr>
<tr>
<td></td>
<td>Cut</td>
</tr>
<tr>
<td></td>
<td>Copy</td>
</tr>
<tr>
<td></td>
<td>Paste</td>
</tr>
<tr>
<td></td>
<td>Delete</td>
</tr>
<tr>
<td></td>
<td>Break</td>
</tr>
<tr>
<td>2</td>
<td><strong>Loop</strong></td>
</tr>
<tr>
<td></td>
<td>• The <strong>Loop</strong> button works to copy paste the clip data in the <strong>Motion Clip</strong> track only.</td>
</tr>
<tr>
<td></td>
<td>• Click and drag the clip’s right edge rightward to repeat the clip.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Speed</strong></td>
</tr>
<tr>
<td></td>
<td>• The <strong>Speed</strong> button works to speed up the clip data in the <strong>Motion Clip</strong> track only.</td>
</tr>
</tbody>
</table>
Using Timeline

- Click and drag the clip’s right edge rightward/leftward to decelerate/accelerate the speed.

C. View & Playback Control

| 1 | Zoom in/out (+, -) | Click the **Zoom in** button (Shortcut: + or Shift + "=") to increase the time (cell) unit size.  
|   | Actual Size | Click the **Zoom out** button (Shortcut: -) to decrease the time (cell) unit size.  
|   | Fit to Window | Click the **Actual Size** button to show the time unit represented as 30 frames per second. 
|   |                | Click the **Fit to Window** button to view all the timeline items within the timeline window space. |
| 2 | Play and Stop | Click the **Play | Pause** button (Shortcut: spacebar) to play the project, click again (Shortcut: spacebar) to pause. 
|    |                | Click the **Stop** button (Shortcut: ,) to stop playing. |
| 3 | Current Frame | This field shows the current frame number on the timeline. You may also type-in the frame number to jump to the target frame. This allows you to go to your precise target location; this is especially convenient for animation with clear timing control. |
## D. Tracks

<table>
<thead>
<tr>
<th></th>
<th>PRO/Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PRO Transformation</td>
<td>Shows the actor transformation keys. You may use the transform tools on the <a href="#">Left-side Tool Bar</a> to set the transformation keys.</td>
</tr>
<tr>
<td>2</td>
<td>PRO Viseme</td>
<td>Shows the representative clips containing voice and lip keys. You may freely edit the clip such as looping, changing speed or breaking.</td>
</tr>
</tbody>
</table>
| 3  | Voice | Shows the imported audio data. You may double-click anywhere on the track to load an audio file.  
|    |    | - Click the button to show the Lips track. |
| 4  | Lips | Shows the lip-synching keys. You may double-click elsewhere on the track to set the lip keys. |
| 5  | Motion Clip | Shows the applied motion clips. You may also click the [Face Puppet](#) button to record a motion clip. |
| 6  | PRO Head | Shows the head motion keys. You may double-click elsewhere on the track to set the head keys. |
| 7  | PRO Face | Shows the facial expressions keys. You may double-click elsewhere on the track to set the face keys. |
| 8  | PRO Eye | Shows the eye motion keys. You may double-click elsewhere on the track to set the eye keys. |
| 9  | PRO Shoulder | Shows the shoulders motion keys. You may double-click elsewhere on the track to set the shoulder keys. |
| 10 | Auto Motion | Shows the applied auto motion or idle motion. Auto motions can be |
operated into two modes: **Talk Mode** and **Listen Mode**.

### 11 Music
- Shows the background music data. You may double-click anywhere on the track to load music clips.

### 12 PRO Standard Sub-track Display
- Shows sub tracks for further editing.

### E. Time Scrub

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Time Unit Bar</strong></td>
</tr>
<tr>
<td></td>
<td>• Drag the bar to move the displayable range to a desired time frame.</td>
</tr>
<tr>
<td></td>
<td>• Drag the right edge to change the size of the displayable range.</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Play Head</strong></td>
</tr>
<tr>
<td></td>
<td>Drag to move to the desired time frame.</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>PRO Playback / Export Range</strong></td>
</tr>
<tr>
<td></td>
<td>Use the flags to determine the range for playback and export videos.</td>
</tr>
</tbody>
</table>
Animation Timeline Editing

Before starting to read this page, please refer to the Introducing the Timeline section for more information on the user interface and tools.

### Data Type

In CrazyTalk, there are 3 types of data in the tracks for Timeline Editing - Wave, key and Clip.

<table>
<thead>
<tr>
<th>Data Name</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Wave</td>
<td>Audio Waves store audio data for the actor.</td>
</tr>
<tr>
<td>2 Key</td>
<td>Animation Keys store Lip-synching, and Head, Face, Eye, Shoulder motion data for the actor.</td>
</tr>
<tr>
<td>3 Clip</td>
<td>Animation Clips store the auto motion and motion clips of the actor as well as the background music data. A clip in the Motion Clip track can be accelerated/decelerated, looped or blended into another clip. Please refer to the Speed, Loop and Blending section for more information.</td>
</tr>
</tbody>
</table>

**Note:**
Please refer to the [Timeline Shortcuts](#) section for more information.

### Key/Clip Selections

- **Select single key/clip** - Single-click on the target key/clip, the selected clip will then be highlighted in blue.

- **Select all keys/clips** - Double-click on the target track name.

- **Multiple key/clip selection**
  - Drag the cursor in the specific track to highlight the keys/clips covered under it.
  - Use Command + LMB (Left Mouse Button) to select multiple keys/clips.

**Note:**
The clip in the *Auto motion* track is the motion pattern that reacts to the voice. You may direct [apply an auto motion template](#) from the library.
## Timeline Editing Tools

**CrazyTalk** provides basic clip editing tools to cut, copy, paste, delete or break portions of the timeline. You may edit the voice script as well as the facial movements and expressions.

### Clip Editing Tools

To access the data editing tools, click the **Function** button in the **Timeline** to show the drop-down list.

<table>
<thead>
<tr>
<th>Command</th>
<th>Keyboard Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut</td>
<td>( \text{Ctrl} + \text{X} )</td>
</tr>
<tr>
<td>Copy</td>
<td>( \text{Ctrl} + \text{C} )</td>
</tr>
<tr>
<td>Paste</td>
<td>( \text{Ctrl} + \text{V} )</td>
</tr>
<tr>
<td>Delete</td>
<td>( \text{Fn} + \text{Delete} )</td>
</tr>
<tr>
<td>Break</td>
<td>( \text{Ctrl} + \text{B} )</td>
</tr>
</tbody>
</table>

### Cut

Select the **Cut** command, or use hotkey \( \text{Ctrl} + \text{X} \) to cut the target key or clip in.

### Copy

Select the **Copy** command, or use hotkey \( \text{Ctrl} + \text{C} \) to copy the selected keys or clip.

### Paste

Select the **Paste** command, or use hotkey \( \text{Ctrl} + \text{V} \) to paste single or multiple keys to the target frame.

### Delete

Select the **Delete** command, or use hotkey \( \text{Fn} + \text{Delete} \) to delete highlighted keys or clips.

### Break

Select the **Break** command to divide the highlighted clip into two halves. The **Break** command only works to clip data in the **Motion Clip** and **Music** tracks.

### Note:

Refer to the **Timeline Shortcuts** section for more information.
Track Priority - Motion Clip and Auto Motion

There is a specific priority in the Timeline tracks; Motion Clip and Auto Motion.

Data in the Motion Clip Track

The data in the Motion Clip track is in clip form. The clip stores data from the Motion Clip Library and the Face Puppet Panel.

- Motion clips from the Motion Clip Library

| Motion Clip          | Rolling Eyes_A_01 |

- Puppet clips from the Face Puppet Panel

| Motion Clip          | Puppet Clip       |

Priority for Motion Clip Track and Auto Motion Track

When a time frame contains data from these two tracks, then the priority between Motion Clip and Auto Motion tracks as illustrated below:

- When the Auto Motion encounters Motion Clips from the Motion Clip Track:
  
  Auto motions in the Auto Motion Track > Motion clips from the Motion Clip Library in the Motion Clip Track, only the data with the highest priority takes effect. Facial expressions and transform data of the auto motion will be ignored.

<table>
<thead>
<tr>
<th>Motion Clip</th>
<th>Rolling Eyes_A_01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Motion</td>
<td>Default: Talk mode (Auto Motion)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motion Clip</th>
<th>Auto Motion (Auto Motion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Motion</td>
<td>Auto Motion (Auto Motion)</td>
</tr>
<tr>
<td>Actor with auto motion only</td>
<td>The motion clip takes over the priority from the auto motion</td>
</tr>
</tbody>
</table>
Saving Data From Tracks to Different Libraries

After you are satisfied with your project, you are then able to save the motion data from the tracks to different libraries as templates so that you may re-use them in any future project.

Please note that the data from the Actor Transform and the Music tracks CANNOT be saved as custom templates.

### Saving Voice Script

#### Compacting Complete Script Data of Entire Project

1. Switch to the Voice Script >> Script >> Custom library.

2. Select *multiple or none* of the clips in the Viseme track.

3. Click the Add button under the Content Manager.

4. The data (in the entire project) from the Viseme, Voice, Lips, Motion Clip (sub-tracks included) and Auto Motion tracks will be saved as a Voice Script template.
Saving Single Script Data

1. Switch to the **Voice Script >> Script >> Custom** library.

2. Select one target clip in the **Viseme** track.

3. Click the **Add** button under the **Content Manager**.

4. The data (within the range of the selected clip) from the **Viseme, Voice, Lips, Motion Clip** (sub-tracks included) and **Auto Motion** tracks will be saved as a **Voice Script** template.
Saving Idle Motion

Compacting Idle Motion

When you save an idle motion as a template, the data from the Motion Clip and Auto Motion tracks will be merged and compacted into an idle template.

1. Switch to the Auto Motion >> 03_Idle >> Custom library.

2. Click the Add button under the Content Manager.

3. The data (in the entire project) from the Motion Clip (sub-tracks included) and Auto Motion tracks will be merged and saved as an Idle Motion template.
Applying Idle Motion Comprising Multiple Motion Sources

When you re-use the custom idle motion template, the start point of the idle motion will randomly determine when the idle motion is comprised of multiple motion sources.

1. The data from the Motion Clip and Auto Motion tracks are merged and saved as an idle motion template.

2. When you apply the template, CrazyTalk first determines a random start point of the template.

3. Then the template is applied to the Auto Motion track in loop.
Compacting Complete Motion Clips of an Entire Project

1. Switch to the Motion Clip >> Custom library.

2. Select multiple or none of the clips in the Motion Clip track.

3. Click the Add button under the Content Manager.

4. The data (in the entire project) from the Motion Clip (sub-tracks included) and Auto Motion tracks will be merged and saved as a Motion Clip template.

Saving Single Motion Clip

1. Switch to the Motion Clip >> Custom library.
2. Select one target clip in the **Motion Clip** track.

3. Click the **Add** button under the **Content Manager**.

4. The data of the selected **Motion Clip** (sub-tracks included) will be saved as a **Motion Clip** template.

---

**Saving Auto Motion Profile**

Since the auto motion data in the **Auto Motion** track is the result of the response to the loaded sound in accordance with the setting in a provided profile, when you save the data to the template library, you are actually saving the settings of the profile instead of the motion itself.

**Saving Auto Motion Profile to Custom Library**

1. Switch to the **Auto Motion >> Custom >> 01_Functional** or **02_Scenario** libraries.
2. Select at least one target clip in the Viseme track or in the Auto Motion track.

3. Click the Add button under the Content Manager.

4. The settings of the profile that form the auto motion will be saved as an Auto Motion template.

Saving Auto Motion Profile Elsewhere [PRO]

In the previous section, you could only save the profile into the Custom library. However, if you want to save it elsewhere, then follow the steps below:

1. Select the target clip from the Viseme or Auto Motion tracks.

2. Click the Auto Motion Settings button on the tool bar to open the panel.

3. Click the Save button on the upper-left corner.
4. The settings of the profile in the panel are able to be saved as a template in the designated drive.
Using Timeline

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Speed, Loop and Blending

In CrazyTalk, you may change the speed and loop status of clips in the Viseme, Auto Motion or Motion Clip tracks of the timeline. Adjusting the length of the speed, loop and blending is also possible.

### Speed

1. In the timeline, select a clip from either the Viseme (for PRO only), Auto Motion or the Motion Clip track.

2. Click the Speed button, on the timeline.

3. Drag the end (right edge) of the clip to change its speed. The longer the clip, the slower it is- and vice versa.

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image 1" /></td>
<td>Move your cursor to the end of the clip, it will then change into a double-headed arrow.</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image 2" /></td>
<td>Squeeze the clip to speed up the action.</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image 3" /></td>
<td>Stretch the clip to slow down the action.</td>
</tr>
</tbody>
</table>

### Loop

1. In the timeline, select a clip from either the Viseme (for PRO only), Auto Motion or the Motion Clip track.

2. Click the Loop button, on the timeline.

3. Drag the end (right edge) of the clip to change its loop time. The clip then shows a series of connective rectangles, each rectangle represents one loop.

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Image 4" /></td>
<td>Move your cursor to the end of the clip, it will then change into an single-headed arrow with a plus box.</td>
</tr>
</tbody>
</table>
Blending

The blending can happen between clips in a single track or in different tracks. The rules are listed below:

**Blending Between Clips on Motion Clip and Auto Motion Tracks**

- By default, motion clips will blend with the clips (auto motion or idle motion clips) in the **Auto Motion** track, which makes the transition between two motion clips smoother.

- If there is no clip shown in the **Auto Motion** track, then when you play back the project, the actor will be still within these empty time frames until it goes to the start frame of the blending part of the next motion clip.

**Blending Between Clips on Single Track**

If you wish to manually blend two clips together, then follow the steps below:

1. Pick the latter of the two clips. The blending part will be shown before the clip. (Empty rectangle)

2. Drag the clip to connect to the previous clip. The actor will gradually change the facial movement during the interval duration.
Breaking Clips

The **Breaking Clips** method applies to the clip-type data in the **Viseme**, **Motion Clip** and **Music** tracks. With this feature you may extract partial clips from a very long clip and delete the redundant clips.

### Breaking Clips in the Viseme Track (for **PRO** only)

If you have prepared a non-stop voice and you want to break it apart into several pieces, you do not need to re-create the voice again. By using the **Break** feature, you can cut the voice into different parts so that the actor can have different voice clips and responses inserted into the empty frames between two trimmed clips.

1. Apply an actor in a new project.

2. Add a voice to the actor in **Listen Mode**. The voice is a sound file composed of several sentences. You may observe it in the **Audio** track.

3. Right click on the clip in the **Viseme** track where the sound wave is flat and you want to
break it.

4. Select the **Break** command in the right-click menu.

5. Drag the latter half of the clip to another later time frame.

6. In the empty frame between the two clips, add another voice clip.

7. Apply a different auto motion to this new clip.

8. Playback the project and the actor will have new sound inserted into the original voice.
Breaking Clips in the Motion Clip Track

When the actor's facial motion affects the accuracy of lip-synching, then you may adjust the applied motion clip. In this example, the actor's facial motion affects the accuracy of lip-synching.

1. If you do not want the last half-motion, then press F3 to access the Timeline, and find the clip in the Motion Clip track.

2. Drag the play head to the time frame where you need to break the clip into new clips.

3. Click the Function button on the Timeline toolbar, and select Break from the clip editing drop-down list. You may alternatively right-click on the clip and select Break from the pop-up menu.
4. The clip will then be divided into two parts. Select the second one and delete it.

5. Playback the project and the actor's facial motion will not affect the lip-synching when talking.
Using Timeline

Breaking Clips in the Music Track

You may extract partial clips of the loaded background music.

1. Click **F3** to access the **Timeline** and find the clip in the **Music** track.

2. Drag the play head to the time frame where you need to break the clip up into new clips.

3. Click the **Function** button on the **Timeline** toolbar, and select **Break** from the clip editing drop-down list. You may alternatively right-click on the clip and select **Break** from the pop-up menu.

4. The clip will then be divided into two parts. Select the second one and delete it.

5. Click the **Background Music** button on the **Timeline** toolbar, and adjust the **Fade out** slider.
6. Playback the project and the background music will fade out at the end of the newly trimmed clip.
# Transformation Track

The **Transformation** track stores the transform data through the entire project. It is useful when you want the actor to be out of the scene in the very beginning of the project, or when you want the actor to have a close-up shot in a specific time frame.

## Using Transform Keys

1. Add an actor and open the **Timeline**.

2. Move to the start frame and press down one of the transform tools (in this case, the **Move** tool is pressed down).

3. Drag and drop the actor out of the view window (working area).
4. Go to another time frame.

5. Move the actor back to the scene (click the **Home** key to quickly move the actor back to the center of the scene).

6. The **Transformation** track will auto-add a new key and the transition effect between the two keys will be auto-generated.

7. The actor will start to move into the scene as you play back.

8. Repeat the step above to add transform keys in different time frame and then you may create an actor with transform animation.
9. Dragging to re-arrange the keys closer/farther to each other will increase/decrease the speed of the transition animations between two adjacent keys.
Using Voice Morph

The voice for the animated actor depends on the audio source of the script. If you create the script by importing a WAV file, or by recording with the sound recorder, then the actor's voice is the voice from the original audio source. You may choose a synthetic voice for the actor if you use the text-to-speech converter to create a script from plain text. However, you may also apply artificial voice effects to the voice for additional effects.

Follow these steps to create voice effects:

1. Optionally select the desired voice effects to be used in the script.
   - Check the Pitch Scale check box and move the corresponding slider to specify the pitch of the voice.
   - Check the Head Size check box and move the corresponding slider to adjust the resonance frequencies.
   - Check the Robot check box and move the corresponding slider to add a robotic voice effect.
   - Check the Echo check box and move the corresponding slider to add an echo effect.
2. Click the **Preview** button to play the script and preview the voice effect.

3. Click the **Apply** button when done.
Auto Motion Track

The Auto Motion track stores one audio driven motion for the entire project. Depending on whether the audio data is loaded or not, there can be two types in the track - Auto Motion and Idle Motion.

### Auto Motion

When audio data is given, the auto motion can be produced under the following situations:

- When loading an audio data and selecting Talk Mode as the default auto motion, the motion pattern will be automatically applied to the actor.

- When loading an audio data and selecting Listen Mode as the default auto motion, the motion pattern will be automatically applied to the actor.

- Switch the Content Manager to the Auto Motion tab, and apply a template from the Functional or Scenario library.

  ![Auto Motion](image)

**Note:**
If you apply a designed projects or talking scripts sample, then there will be data stored in the Auto Motion track as well.

### Idle Motion

If audio data is not available, then the idle motion can be produced under the following situations:

- When an actor is created without voice scripts, then the default idle motion will be automatically applied to the actor.

- When loading an audio data and selecting Lips Sync Only as the default auto motion, the default idle motion will be automatically applied to the actor.

  ![Auto Motion](image)
Switch the **Content Manager** to the **Auto Motion** tab, and apply an idle template from the **Idle** library.

| Auto Motion | Friendly (Idle) |

**Note:**

[Download and install the bonus pack](#) from the official website, to get more idle motion styles.
Applying and Creating Motion Clip Templates

After an Auto Motion is applied to the actor, users can then overlap the actor’s motion with ready or custom motion clips which are stored in clip form inside the Motion Clip track.

### Applying Motion Clips

When you apply a motion clip template, the data will be stored in the Motion Clip track.

### Creating Motion Clip Template

If you wish to create a custom motion clip from the current project, then the data saved in the custom library may vary depending on the following situations:

- Selecting single-motion clip: Data in the Motion Clip track will be saved alone.
- Selecting multiple motion clips or not selecting any motion clip: Data in the Motion Clip and Auto Motion tracks will be merged before being saved.

Note:
The data structure of a created custom script is a bit different. You may refer to the Using Talking Scripts section for more details.
Extracting Motion Clip from Auto Motion

In addition to using the Puppeteering method to create motion clips, you are able to extract motions from an auto motion clip to generate a motion clip.

**Extracting Motion Clip from Auto Motion**

1. Make sure you have an actor already.

2. Add a voice to the character. You may determine if the voice is applied with either **Talk mode** or **Listen Mode**.

3. Open the **Timeline** (Shortcut: Windows - F3; Mac - fn + F3).

4. Right click on the target motion in the **Auto Motion** track.

5. Select the **Copy to Motion Track** command from the right-click menu.

6. The motion of the selected **Auto Motion Clip** will be converted into the **Motion Clip** track.
Note:
You may then further edit the motion clip. Please refer to the sections below for more information:

- [Saving Data From Tracks to Different Libraries](#)
- [Speed, Loop and Blending](#)
- [Breaking Clips](#)
- [Removing Partial Motions from a Motion Clip](#)
- [Using the Face Key Editor](#)
Removing Partial Motions from a Motion Clip

Once you add a motion clip either from the library or by creating one with the Face Puppet panel, the partial motions in the clip can be removed so that you can extract the desired motion parts of that clip.

Removing Partial Motions

1. Add a motion clip to the actor.

The motion clip affects the actor’s Head, Eye, Face and Shoulder motions.

2. Open the Timeline (Shortcut: Windows - F3; Mac - fn + F3).

3. Right-click on the motion clip in the Motion Clip track and select the Remove Motion entry.
4. Choose a part in the sub-menu so that the motion of that part in the clip will be removed.

The entire motion of the eyes in the clip is removed.

5. If you repeat the steps to remove the motions of all parts in the clip, then you will get a neutral motion clip that causes the actor to stay still.
Using the Face Key Editor

**CrazyTalk** integrates various key-editing panels into one single **Face Key Editor**. Use it to add/modify keys for **Face**, **Head**, **Eyes** and **Shoulders** tracks.

### Activating for Using the Face Key Editor

1. Make sure you have applied at least a **Motion Clip** to the actor.

2. Open **Timeline** (Shortcut: Windows - F3; Mac - fn + F3).

3. Click the arrow button of the **Motion Clip** track to show its sub-tracks.

4. Display and activate the **Face Key Editor** panel.
   - Move the **play head indicator** within the range of an existing **Motion Clip** and click the **Face Key Editor** button on the tool bar of the **Timeline**.
o Double-click on an empty frame in one of the sub-tracks to display the Face Key Editor for adding a new key.

o Double-click on an existing key in one of the sub-tracks to display the Face Key Editor for editing.

Note:

- If the current time is not within the range of a Motion Clip, then even if the Face Key Editor displays, will be disabled.

- Please refer to the sections below for more information about using the Face Key Editor:
  - Introducing the Face Key Editor
  - Setting the Head Keys
  - Setting the Face Keys
- Setting the Eye Keys
- Setting Default Key
Introducing the Face Key Editor

The **Face Key Editor** helps you edit the keys in a specific **Motion Clip**. You may then manually modify the details of the facial features, head and the shoulders to create an ideal facial expression or head and shoulder movements. Please refer to the Using Face Key Editor section for the information about displaying and activating the **Face Key Editor** panel.

The **Face Key Editor** is divided into three tabs: **Facial**, **Template**, and **Modify**.

---

**Facial Expression Tab**

![Facial Expression Tab](image)

1. **Add/Modify Head Key**
   
   Select to rotate / tilt / move the head.

2. **Solo Feature Selection**
   
   Select to highlight the desired features and convert the changes into keys.

3. **Default Key**
   
   Click to set keys and neutralize all adjustments made to facial features.

4. **Clear Selection**
   
   Deselect all features.
The Interactive Area

In order to set keys with this tab, you need to understand the interactive area. You need to drag from inside of the interactive area to elsewhere to set the strength of the keys. The screen area in the following illustration is the interactive area.

1. Select one or more solo features from the Solo Facial Feature Pane.
2. Move your mouse cursor into the interactive area.
3. Drag from the interactive area to elsewhere in your display to automatically add or edit a key.
Template Tab

1. Expression Style
   Use the drop-down list to switch to a different expression template library.

2. Expressiveness
   Drag the slider to decide the strength of the applied expression template.
### Modify Tab

#### Facial Expression

<table>
<thead>
<tr>
<th>Feature</th>
<th>Expression</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise Left Inner Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Left Outer Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Lower Left Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Left Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Left Cheek</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Drop Lower Lip</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Right Inner Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Right Outer Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Lower Right Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Right Brow</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Raise Right Cheek</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
<tr>
<td>Shrink Nose</td>
<td><img src="image" alt="Face Key Editor" /></td>
<td><img src="image" alt="Face Key Editor" /></td>
</tr>
</tbody>
</table>

#### Expressiveness

- **Solo Feature Strength**: Drag the sliders in this pane to set a key to the individual facial offset features.
- **Expressiveness**: Drag the slider to decide the strength of the applied expression template.
- **Reset**: Click this button to retrieve the initial status of the sliders.
Setting the Head Keys

Using the Face Key Editor, you can set or modify the rotation / tilt / movement of the actor's head.

1. Make sure you have prepped an actor and the current time frame is within an existing motion clip. Launch the Face Key Editor.

2. Select one of the four buttons in the Head group of the Face Key Editor.

3. Drag from inside of the interactive area to rotate or move the actor's head.
- **Head 3D Move**
  - Drag mouse left
  - Drag mouse right

- **Head Rotate**
  - Drag mouse left
  - Drag mouse right

- **Head Move**
  - Drag mouse left
  - Drag mouse right
- Drag mouse up
- Drag mouse down

- Head Front and Back

- Drag mouse left
- Drag mouse right
There are three methods for adding or editing a facial key. By manually setting the facial keys in a motion clip, you are able to create more dramatic facial expressions in a specific time frame.

### Using the Facial Expression Tab

1. Make sure you have prepped an actor and the current time frame is within an existing motion clip. Launch the Face Key Editor.

2. Select the desired facial features to set keys in the pane.

3. If you are using the mouse as your input device, then press and hold the left-mouse button inside the interactive area.

4. Drag the mouse in the interactive area to make the changes.
You may pick multiple facial features to simultaneously move them.
Using the Template Tab

If you do not want to set an expression, one facial feature at a time; then it is recommended that you use templates. Especially for Sprite-based faces.

1. Switch to the Template tab.

2. Select a category from the Expression Style drop-down list.

3. In the Template Library pane, double-click on the desired template. The actor will instantly change to the selected expression.

4. Change the Expressiveness values to adjust the strength of the applied expression.
Expressiveness = 20

Expressiveness = 80
Using the Modify Tab

If you use the Facial tab to set facial keys, then you are actually modifying the values of each slider in the Modify tab.

Therefore, you can use the sliders inside of this tab to fine-tune the values for each facial feature.

1. Switch to the Modify tab.

2. Drag the slider to change the value, the selected character will then change the facial expression accordingly.

Shrink Nose is set to minimum.  Shrink Nose is set to maximum.
Note:

- Please note that each template is a combination of different values from the facial feature sliders.
Setting the Eye Keys

Any CrazyTalk actor can roll its eyes with facial animations, which is pretty cool and can contribute to a number of realistic expressions. By changing the size of the eyeballs, the facial expression can become more dramatic.

### Setting the Eye Keys

1. Make sure you have prepped an actor and the current time frame is within an existing motion clip. Launch the Face Key Editor.

2. Select the Eyes in the pane.

3. If you are using the mouse as your input device, then press and hold the left-mouse button inside the interactive area.

4. Drag the mouse outside the interactive area to make the changes. The character's eyes will start to move along with your mouse. An eye key will automatically be set.
5. If you select the **Eye Scale** buttons beside the eyes in the pane, then you may increase or decrease the size of the eyeballs.

Shrink the eyeballs to make the expression more dramatic.
Setting the Default Key

The Default Key helps you retrieve the neutral status of all facial features in a model. You may use it to set neutral keys to all facial features or to retrieve their initial status.
Setting the Default Key

Each time you want to remove all facial expressions and go back to the neutral expression state, or when you want to remove the transformation keys (rotation, location, scale) and go back to the initial status, then follow the steps below:

1. Double-click on the desired **Face** key (in the timeline) to bring up the **Face Key Editor** panel. Please note that the key already contains offset data.

2. Select any feature in the **Face Key Editor** and drag in the interactive area to modify the model's features.

3. Click the **Default Key** button and the offset data will be cleared. The model will then turn back to its neutral appearance and the original key will be replaced by a neutral one.
Note:

- The Default Key feature neutralizes the keys in the Head, Face, Eye and Shoulder tracks inside the current frame.
Adding or Modifying Lip-sync Keys

CrazyTalk provides special lip synchronization tools to make sure that the lip movements match the words being spoken by the virtual actor. A viseme is a generic facial image that can be used to describe a particular sound. It is the visual equivalent of a phoneme, or a unit of sound in a spoken language. Using visemes, CrazyTalk provides perfect lip synchronization which you can later adjust for different sounds as required.

The lip-synching keys are stored in the Lips track, which belongs to the Audio track. You may open it by clicking the button on the Audio track.

Audio Track and Lips Track

The Audio track stores the audio file from the Import Audio panel or the Voice Script Library. The audio data is displayed in a wave form. You may double-click anywhere on the track to load an audio file.

Click the button on the Audio track to show the Lips track. You may manually add lip-synching keys to this track by double-clicking on the cells in this track.
Adding or Modifying Lip-sync Keys

The lip synchronization effect is applied to only a small section of the script and indicated on the **Lips** track by a grey box. To access the **Lips Sync** panel, click the **Lips Sync** button in the **Timeline**.

### Adding Lip-sync Keys

You may double-click anywhere on the **Lips** track to synchronize the lip movements in the **Lips Sync** panel.

1. Select a viseme or phonetic sound from the various options displayed.
2. Move the **Expressiveness** slider to adjust the strength of the lip movements to specify the intensity.
Modifying Lip-sync Keys

You may move the lip-synching keys to other parts of the script as desired, or use the data editing tools to duplicate the lip movements.

To modify a lip-synching key, double-click on the target key to adjust the lip-synching settings in the Lips Sync panel.
Adding Background Music

CrazyTalk provides a track for adding background music files. Once the audio files are loaded, you may then adjust the basic settings for individual audio clips.

Click the Background Music button in the Timeline, the Background Music Setting panel will then open.
Importing Background Music

There are two methods to load the background music:

- Drag and drop an audio file into the Music track.

- Double-click anywhere on the Music track to choose an audio file in the Finder. The file will then be imported and used as the background music.

Modifying Background Music Clips

1. Double-click on the target background music clip to access the Background Music Setting panel.

2. Drag the sliders to decide the Volume, Fade In and Fade Out percentage.

Note:

- The maximum percentage of the Fade In and Fade Out is 50%. This means the percentage of the whole clip.

- You may right-click on the music clip and use the Clip Editing Tools to modify the music clips in the track.
Cut  
Copy  
Paste  
Delete  
Break  

2012 Reallusion
Chapter 7
Exporting
Exporting

CrazyTalk offers the convenient feature of exporting your project into multimedia formats that are compatible with a wide range of devices. For instance, you can now convert your work to an AVI file in DVD, HD, iPad and iPhone quality. You may also convert it into sequenced image (BMP/JPG/TGA/PNG) files to broadcast on a web server.

Exporting Video - Windows OS

1. Click the Export button.

2. In the Export Setting panel, switch to the Video tab.

3. Choose from the Format drop-down list.

4. Determine the frame size from the Frame Size drop-down list.

5. You may also manually adjust the Output Size by entering target width and height. Activate the Lock Ratio to keep fixed ratio for the exported video.

6. Click the Export button to export the project into a video.
Exporting QuickTime Video - Mac OS

1. Click the Export button.

2. In the Export Setting panel, switch to the Video tab.

3. Choose the desired codec from the Video Codec drop-down list.

4. Determine the frame size from the Frame Size drop-down list.

5. You may also manually adjust the Output Size by entering target width and height. Activate the Lock Ratio to keep fixed ratio for the exported video.

6. Click the QuickTime Export button to export the project into an MOV video.

Exporting Video for Further Compositing

If you want to export videos for compositing with other image or video by using video editing tools, then there are three methods according to your operating system:
**Exporting PopVideo - Windows OS**

*PopVideo* is a special format supported by *Reallusion* animation products. It is a video format that is able to compact *Alpha Channel* information into the exported video.

1. Make sure the *background* is set to be *Actor Only* with a solid color.

![Background Settings](image)

2. Click the *Export* button to show the panel.

3. Simply select the *popVideo* format from the *Format* drop-down list and export the project.

**Exporting MOV with Alpha Channel - MAC OS**

The videos in *MOV* format are able to contain *Alpha Channel* information. If you want to use videos of this type for further compositing in video editing tools, then follow the steps below:

1. Make sure the *background* is set to be *Actor Only* with a solid color.
2. Click the Export button to show the panel.

3. Simply select the Apple ProRes 4444 codec from the Video Codec drop-down list and export the project.

Exporting Video with Solid Background - Windows, MAC OS

If you do not want to include any Alpha Channel information in your exported video, while still need the background of the exported video to be filtered out when you composite the video in video editing tools, then please follow the steps below:

1. Make sure the background is set to be Actor Only with a solid color. The commonly used color is either green or blue.
2. Click the **Export** button to show the panel.

3. Export the project as ordinary video that do not contains any **Alpha Channel**.

4. Load the exported video into any video editing tool.

5. Utilize the feature for filtering the background (e.g. **chroma key** in Adobe Premiere). The exported video can then be overlaying on top of other video or images without the original solid color background.
1. Click the Export button.

2. In the Export Setting panel, switch to the Image tab.

3. Choose the desired format from the Format drop-down list.

4. Determine if you want to export the entire project or just one image:

   - Exporting Entire Project into Sequence Images:
     1. Choose the Sequence radio button.
     2. Set the Frame Rate. If the project is 10 seconds in length and you set the Frame Rate to 30, then you will get 300 images.

   - Exporting Single Image:
.i. Go to the timeframe where you want to export the project as a single image.

![Image]

.ii. Choose the **Current Frame** radio button.

5. Determine the frame size from the **Frame Size** drop-down list.

- Original Resolution
  - DVD NTSC(720x480)
  - DVD PAL(720x576)
  - HD 720p(1280x720)
  - HD 1080p(1920x1080)
  - iPad(1024x768)
  - iPhone(960x640)
  - Netbook(1024x600)
  - Widescreen(1440x900)
  - Widescreen(1680x1050)
  - Full Frame(800x600)
  - Full Frame(1440x1080)
  - Others

6. You may also manually adjust the **Output Size** by entering target width and height.

7. Activate the **Lock Ratio** to keep fixed ratio for the exported video.

8. Click the **Export** button to export the project into sequence images or as one image.
Chapter

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Global Shortcuts

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# Global Shortcuts for Mac OS

## Narrow Keyboard (78 keys) - Mac OS:

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<td>Show / Hide Timeline</td>
<td>fn + F3</td>
</tr>
<tr>
<td>Show / Hide Content Manager</td>
<td>fn + F4</td>
</tr>
<tr>
<td>Show / Hide Tool bar</td>
<td>F5</td>
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<tr>
<td>Online Help</td>
<td>fn + F1</td>
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### Working Area

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<thead>
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<tbody>
<tr>
<td>Undo</td>
<td>Command + Z</td>
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<tr>
<td>Redo</td>
<td>Shift + Command + Z</td>
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<tr>
<td>Play / Pause</td>
<td>Spacebar</td>
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<tr>
<td>Stop and go to Start Frame</td>
<td>,</td>
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<tr>
<td>Show / Hide Face Puppet Panel</td>
<td>P</td>
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<tr>
<td>Show / Hide Auto Motion Setting Panel</td>
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</table>

### Actor Transform

<table>
<thead>
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<tbody>
<tr>
<td>Move Actor</td>
<td>M</td>
</tr>
<tr>
<td>Rotate Actor</td>
<td>R</td>
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<tr>
<td>Scale Actor</td>
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<tr>
<td>Function</td>
<td>Shortcut</td>
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<tr>
<td>--------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Reset Actor's Transformation</td>
<td>fn + Left Arrow Key</td>
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### File

<table>
<thead>
<tr>
<th>Function</th>
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<tbody>
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<td>Open Project</td>
<td>Command ⌘ + O</td>
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<tr>
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<td>Command ⌘ + N</td>
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<td>Command ⌘ + Z</td>
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<tr>
<td>Redo</td>
<td>Shift ⌘ + Command ⌘ + Z</td>
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<td>Play / Pause</td>
<td>Spacebar</td>
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<td>Stop and go to Start Frame</td>
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<td>Reset Actor's Transformation</td>
<td>Home (or fn + Left Arrow Key)</td>
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<tr>
<td>Save Project</td>
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# Timeline Shortcuts

## Windows OS

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<th>Timeline</th>
<th>Function</th>
<th>Shortcut</th>
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<tr>
<td>Copy Keys or Clips</td>
<td>Ctrl + C</td>
<td></td>
</tr>
<tr>
<td>Cut Keys or Clips</td>
<td>Ctrl + X</td>
<td></td>
</tr>
<tr>
<td>Paste Keys or Clips</td>
<td>Ctrl + V</td>
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<tr>
<td>Delete Keys or Clips</td>
<td>Delete</td>
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<tr>
<td>Play</td>
<td>Pause</td>
<td>Spacebar</td>
</tr>
<tr>
<td>Break a Clip</td>
<td>Alt + B</td>
<td></td>
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<tr>
<td>Stop and go to Start Frame</td>
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<tr>
<td>Go to End Frame</td>
<td>End</td>
<td></td>
</tr>
<tr>
<td>Go to Previous Frame</td>
<td>Left Arrow Key</td>
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<tr>
<td>Go to Next Frame</td>
<td>Right Arrow Key</td>
<td></td>
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<tr>
<td>Zoom in the Timeline</td>
<td>+ (or Shift + &quot;)&quot;)</td>
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<tr>
<td>Zoom out the Timeline</td>
<td>-</td>
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## MAC OS

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<tr>
<td>Copy Keys or Clips</td>
<td>Command (\text{⌘}) + C</td>
<td></td>
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<td>Command (\text{⌘}) + X</td>
<td></td>
</tr>
<tr>
<td>Paste Keys or Clips</td>
<td>Command (\text{⌘}) + V</td>
<td></td>
</tr>
<tr>
<td>Delete Keys or Clips</td>
<td>fn + Delete</td>
<td></td>
</tr>
<tr>
<td>Play</td>
<td>Pause</td>
<td>Spacebar</td>
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<tr>
<td>Action</td>
<td>Shortcut</td>
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<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Break a Clip</td>
<td>Option + B</td>
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<td>Stop and go to Start Frame</td>
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<tr>
<td>Switch Brush / Eraser</td>
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<tr>
<td>Zoom In</td>
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<td>-</td>
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<tr>
<td>Zoom Fit</td>
<td>*</td>
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<tr>
<td>Zoom Real Size</td>
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</tbody>
</table>

| Face Orientation and Face Fitting Panels | | |
|-----------------------------------------|--|
| **Function**                           | **Shortcut**           |
| Zoom                                    | Mouse Wheel            |
| Zoom In                                 | +                      |
| Zoom Out                                | -                      |
| Zoom Fit                                | *                      |
| Zoom Real Size                          | /                      |

| Face Puppet Panel                     | | |
|----------------------------------------|--|
| **Function**                           | **Shortcut**           |
| Switch Face Profiles                   | 1~7                    |
| (During Previewing and Recording)      |                        |
| Switch Full Face Controls              | Q, W, E, R, T, Y       |
| (During Previewing and Recording)      |                        |
| Start Previewing                       | Space bar              |
| Start Recording                        | Ctrl + Space bar       |
### Mask Editor

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<td></td>
</tr>
<tr>
<td>Start Previewing</td>
<td>Space bar</td>
</tr>
<tr>
<td>Start Recording</td>
<td>Option □ + Space bar</td>
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</table>