

 REALLUSION®

CrazyTalk® 8

Create Talking Animations from Images



CrazyTalk 8 User Manual

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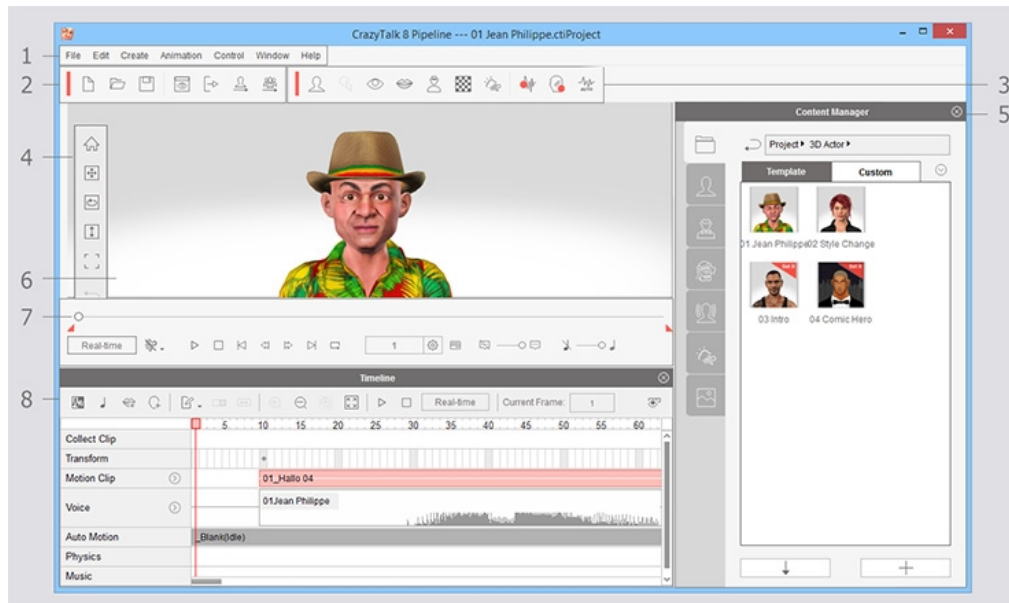
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CHAPTER 1

Knowing the Environment (New)

The main user interface of **CrazyTalk** is divided into 8 parts. Please refer to the links below for more details about each parts.



1 [Main Menu](#)

The main menu contains each command in **CrazyTalk** (the commands in the **Timeline** are not included).

2 [Project Toolbar](#)

(Shortcut: Windows - F5;
Mac - fn + F5)

The toolbar includes tools for you to create, open, save and export a project.

3 [Functional Toolbar](#)

(Shortcut: Windows - F6;
Mac - fn + F6)

The toolbar includes **Actor Editing Tools** and **Adding Voice and Motion tools**.

4 [Left-side Toolbar](#)

The tools in this panel are able to transform the actor, enter full-screen mode, or undo and redo actions.

5 [Content Manager](#)

(Shortcut: Windows - F4;
Mac - fn + F4)

The manager keeps embedded and custom templates for applying.

6 **Preview Window** (Working Area)

The actor and visual results can be observed in the **Preview Window**.

7 [Play Bar](#)

The **Play Bar** contains basic playback tools for previewing voice, motions of the actor, and the background music of the project.

8 [Timeline](#)

(Shortcut: Windows - F3;
Mac - fn + F3)

In the **Timeline** you are able to do more custom adjustments for the project.

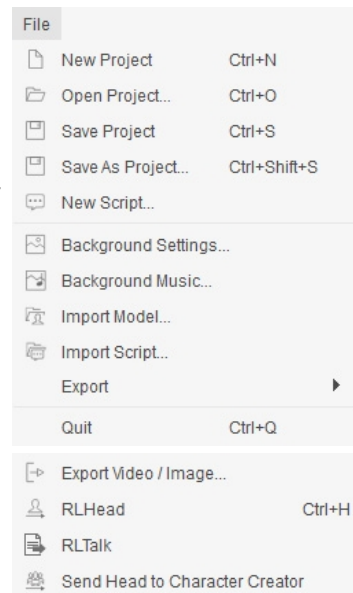
Main Menu (New)

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

File Edit Create Animation Control Window Help

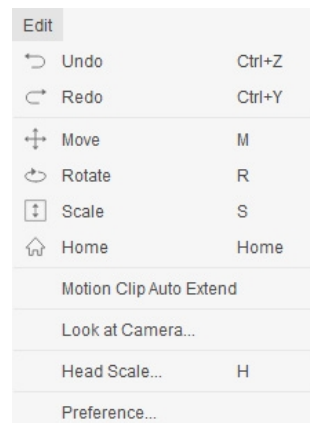
File

New Project	To create an empty project.
Open Project	To open a CrazyTalk project file (*.ctiProject, *.ct7Project).
Save Project	To save the current project to a target directory.
Save As Project	To save the current project as another file to a target directory.
New Script	Clear data in every track of the Timeline.
Background Settings (for 2D Actor only)	To open the Background Settings panel and change the background to an image or a solid color.
Background Music	To open the Background Music Setting panel and load an audio file as a background or modify the basic settings to the audio.
Import Model	To import an existing CrazyTalk actor (*.ctiModel, *.ct7Model, *.ctm).
Import Script	To import an existing CrazyTalk script file (*.ctiScript, *.ct7Script, *.cts).
Export	To export the current project into a designated media. <ul style="list-style-type: none">• Export Video / Image• RLHead (for 3D Actor only)• RLTalk• Send Head to Character Creator (for 3D Actor only)
Quit	To exit CrazyTalk .



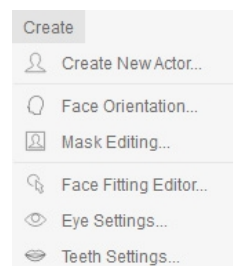
Edit

Undo	To undo the last action.
Redo	To redo the last action.
Move	To relocate the actor.
Rotate	To rotate the actor.
Scale	To resize the actor.
Home	To restore the position of the actor to the center of the project.
Motion Clip Auto Extend	To automatically extend the motion clip when any key is created on its sub tracks.
Look at Camera (for 3D Actor only)	To adjust the angle of eyes or head of the actor to look at the camera.
Head Scale (for 3D Actor only)	To scale up or down of the actor head.
Preference	To adjust the authoring environment to your customized one.



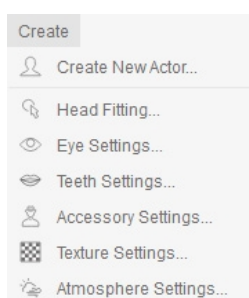
Create (for 2D Actor)

Create New Actor	To invoke the Create New Actor panel and load an image (*.jpg, *.jpe, *.jpeg, *.png, *.bmp, *.tga, *.gif) for creating a new 2D actor.
Face Orientation	To determine the actor's profile and its strength.
Mask Editing	To divide the foreground and background areas.
Face Fitting Editor	To define the facial features with the Face Fitting wizard.
Eye Settings	To adjust the details of the virtual eyes.
Teeth Settings	To adjust the details of the virtual teeth.



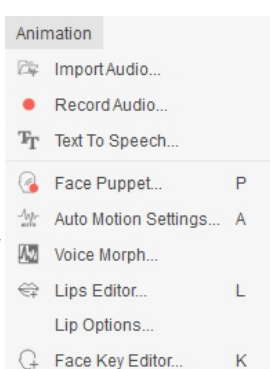
Create (for 3D Actor)

Create New Actor	To invoke the Create New Actor panel and load front and side images (*.jpg, *.jpe, *.jpeg, *.png, *.bmp, *.tga, *.gif) for creating a new 3D actor.
Head Fitting	To define the facial features with the Head Fitting wizard.
Eye Settings	To adjust the details of the virtual eyes.
Teeth Settings	To adjust the details of the virtual teeth.
Accessory Settings	To adjust the details of the accessory.
Texture Settings	To modify the textures of the actor.
Atmosphere Settings	To adjust the details of the atmosphere and the physics effects.



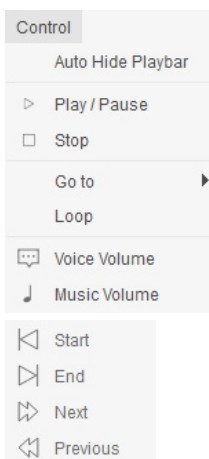
Animation

Import Audio	To load an audio file (*.wav, *.mp3, *.m4a (Mac only), *.aif (Mac only)) as the voice clip for the actor.
Record Audio	To record a voice clip for the actor with the CrazyTalk Sound Recorder .
Text To Speech	To convert type-in text into voice clip for the actor.
Face Puppet	To puppet with mouse movements to generate facial expressions with the Face Puppet panel.
Auto Motion Settings	To open the Auto Motion Settings panel to adjust the behavior for automatically generating auto motions for the actor.
Voice Morph	To morph the actor's voice.
Lips Editor	To adjust or add lip-sync keys in different time frames.
Lip Options	To invoke the Lip Options panel to smooth mouth movements or adjust animation strength.
Face Key Editor	To invoke the Face Key Editor panel to set or modify keys for the motion clip.



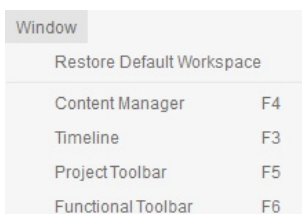
Control

Auto Hide Play Bar	To automatically hide the Play Bar when the Timeline is shown onscreen.
Play / Pause	To playback the current project or pause playing.
Stop	To stop playback.
Go to	To jump to the start, end, previous or next frame of the project.
Loop	To toggle playback loop on/off.
Voice Volume	To turn on/off the voice volume in the current project.
Music Volume	To turn on/off the music volume in the current project.



Window

Restore Default Workspace	To restore all the panels and toolbars to the default docking places.
Content Manager	To show/hide the Content Manager .
Timeline	To show/hide the Timeline .
Project Toolbar	To show/hide the Project Toolbar .
Functional Toolbar	To show/hide the Functional Toolbar .



Help

Help	To access the online help.
Product Demo	To go to the official web page for demo videos or tutorials.
Member	To login with the member account.
Check for Update	To check for available program update.
Purchase	To purchase or upgrade to the latest version of CrazyTalk .
Technical Support	To view the product FAQs and get further assistance.
Get More Content	To access the official content web site for free Bonus Content Packs .
Activate Content	To authenticate online in order to remove the watermarks on the preview window after the trial contents have been purchased.
Content 1-Click Verification	To verify all contents the Template and Custom libraries to make sure the trial contents that have been purchased will be converted into fully licensed ones for freely being used.
Register product	To show the registration dialog for you to sign up and get more bonus content.
Show Welcome Dialog	To show the welcome dialog for you to view useful learning topics and get the latest version of CrazyTalk 8 .
Reallusion on the Web	To access the home page of Reallusion .
CrazyTalk 8 on the Web	To access the home page of CrazyTalk 8 .
About	To show the product information for CrazyTalk 8 .

Help	F1
Help	
Product Demo	
Member	
Check for Update	
Purchase	
Technical Support	
Get More Content	
Activate Content	
Content 1-Click Verification	
Register product	
Show Welcome Dialog	
Reallusion on the Web	
CrazyTalk 8 on the Web	
About	

Project Toolbar (New)

There are buttons for you to save, open, create a new project, preview the image of the current frame, and export the current project.



1 New Project

Click this button to create an empty project.

2 Open Project

Click this button to open a **CrazyTalk** project file (*.ctiProject, *.ct7Project).

3 Save Project

Click this button to save the current project to a target directory.

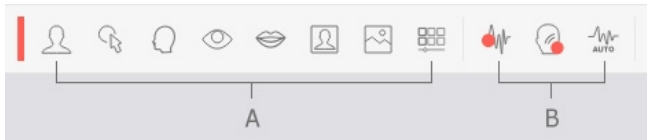
4 Export

Click the **Preview** button to preview the output image of the current frame; click the **Export Video / Image** button to export your project in different media. For 3D actors, you can click the **Export RLHead** and **Send Head to Character Creator** buttons for further editing in **iClone 6.3** and **Character Creator**.

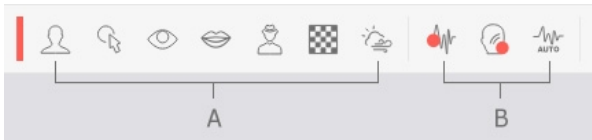
Functional Toolbar (New)

The toolbar consists of two sections (**Actor Editing Tools** and **Adding Voice and Motion tools**) as shown in the illustration below:

Functional Toolbar for 2D Actors



Functional Toolbar for 3D Actors



A. Actor Editing Tools (for 2D Actors)



- | | |
|------------------------------|--|
| 1 Create New Actor | Click to load an image, or load a CT8 Actor (*.ctiModel, *.ct7Model, *.ctm) file as the current actor. |
| 2 Face Fitting Editor | Click to invoke the Face Fitting Editor panel to adjust the wireframe of the actor. |
| 3 Face Orientation | Click to determine the face profile of the actor. |
| 4 Eye Setting | Click this button to invoke the Eye Settings panel to adjust the appearance of the eyes. |
| 5 Teeth Settings | Click this button to invoke the Teeth Settings panel to adjust the appearance of the teeth. |
| 6 Mask Editings | Click this button to invoke the Mask Editor panel to adjust the mask of the actor to determine the foreground area. |
| 7 Background Settings | Click this button to invoke the Background Settings panel to apply custom background. |
| 8 Adjust Color | Click to adjust the entire color tone of the actor. |

A. Actor Editing Tools (for 3D Actors)



- | | |
|------------------------------|--|
| 1 Create New Actor | Click to load front and side images to create a new actor. |
| 2 Head Fitting | Click to invoke the Head Fitting wizard to define the facial features. |
| 3 Eye Settings | Click this button to invoke the Eye Settings panel to adjust the appearance of the eyes. |
| 4 Teeth Settings | Click this button to invoke the Teeth Settings panel to adjust the appearance of the teeth. |
| 5 Accessory Settings | Click to adjust the details of the accessory. |
| 6 Texture Settings | Click to adjust the textures of the actor. |
| 7 Atmosphere Settings | Click to adjust the details of the atmosphere and the physics effects. |

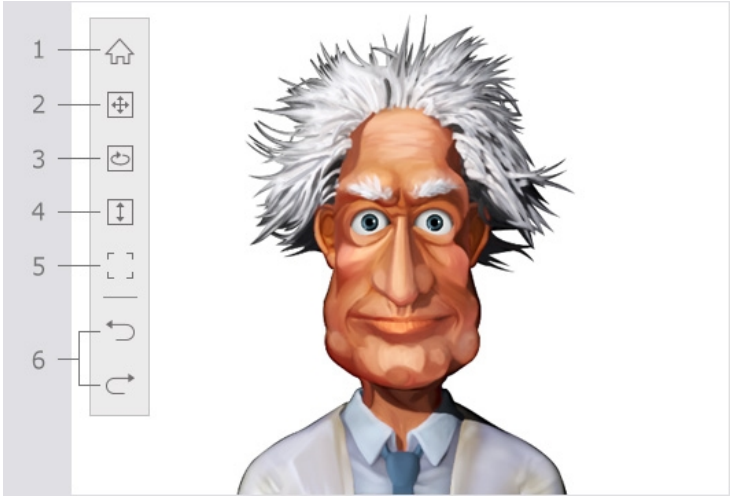
B. Adding Voice and Motion Tools



- | | |
|-------------------------------|---|
| 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. |

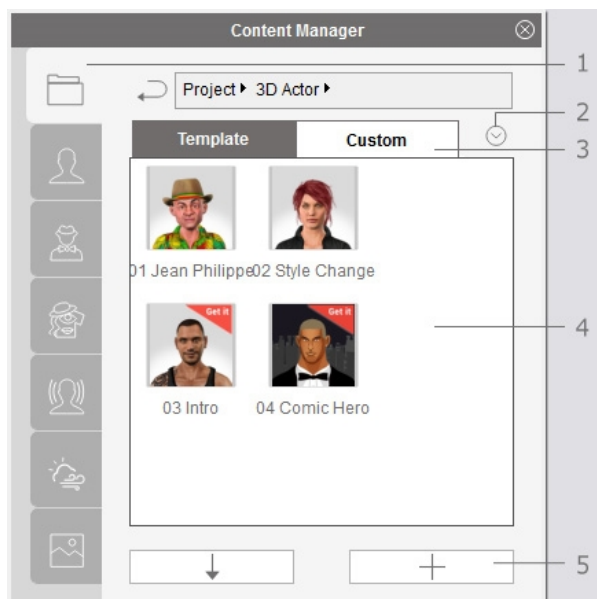
Left-side Toolbar

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










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

Content Manager (New)



1. Category Tabs

Click these tabs to switch to the corresponding category library.

Tabs	Category libraries
	Project
	Actor
	Actor Styles (for 3D actor only)
	Actor Elements
	Animation
	Atmosphere (for 3D actor only)
	Scene

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, [Changing 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

: Click this button to apply the selected template.

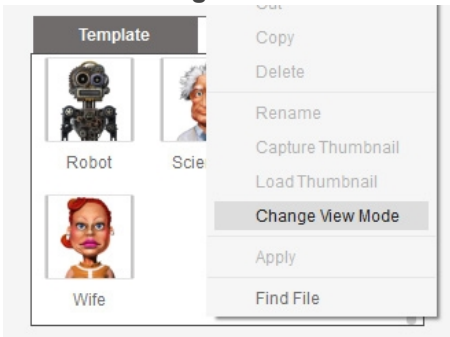
: Click this button to add the current object in the scene into the **Custom Library** of the selected Category.

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

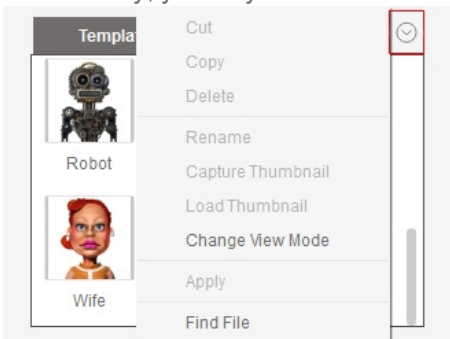
Changing the view mode

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.

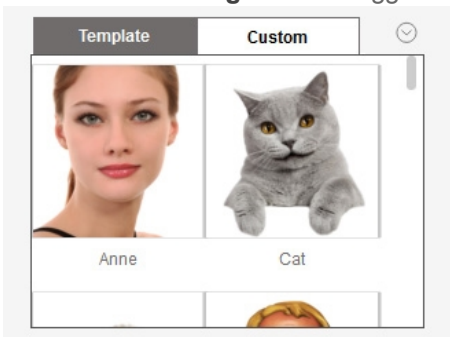
1. Right-click on the space area in the library.
2. Select the **Change View Mode** command in the right-click menu.



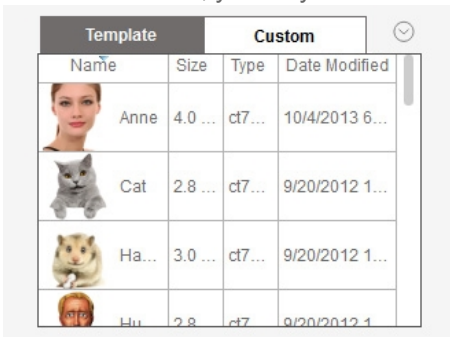
3. Alternatively, you may click the **Menu** button to show the right-click menu and select the **Change View Mode** as well.



4. The **Content Manager** will be toggled to the other modes.




In the detail view, you may click the **Name**, **Size**, **Type** and **Date Modified** captions to sort the templates.

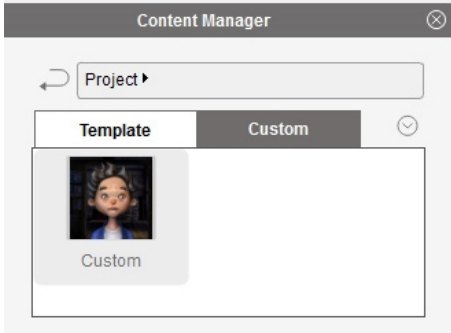


Changing the thumbnail

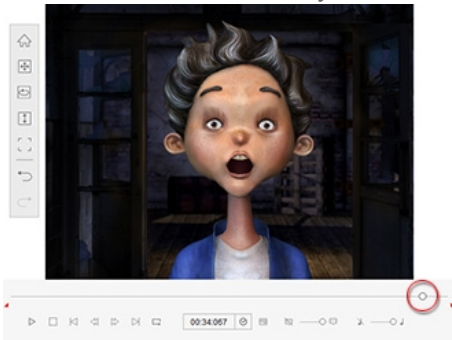
After you add an object into the **Custom Library** as a template, you are then allowed to change the thumbnail of the custom template.

Capturing from the Scene

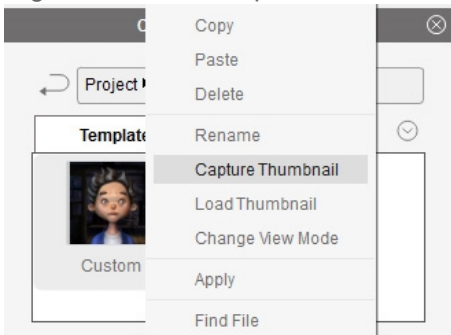
1. Switch to the desired category tab (in this case, the **Project** tab).
2. Click the **Add**  button to add the desired object into the **Custom Library**.



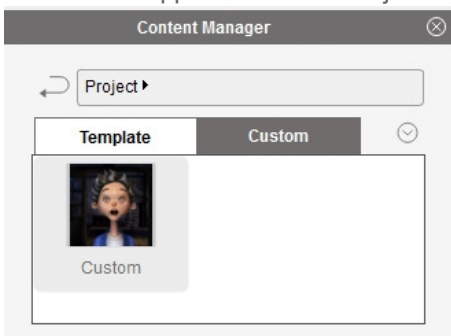
3. Go to the time frame where you want the appearance of the desired object to be captured as a thumbnail.



4. Make sure the template is selected.
5. Right-click on the template and choose the **Capture Thumbnail** in the right-click menu.

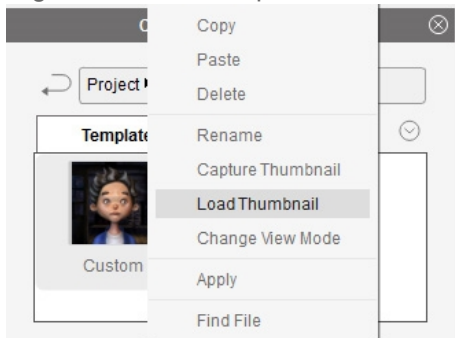


The current appearance of the object will then be captured as the new thumbnail.

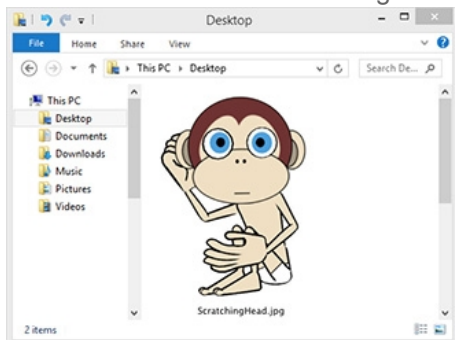


Replacing with an Image

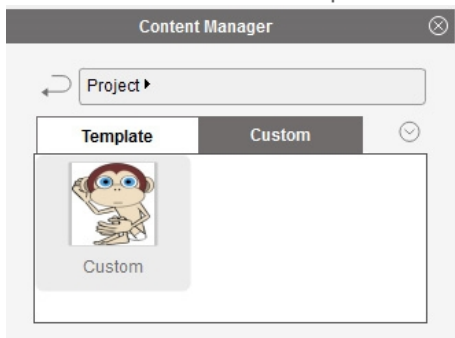
1. Follow the Steps 1 and 2 in the last section.
2. Right-click on the template and choose the **Load Thumbnail** in the right-click menu.



3. Browse and select a desired image.




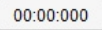
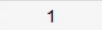
4. The thumbnail will then be replaced.



Play Bar (New)

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



- | | | |
|----|-------------------------------|--|
| 1 | Play Head | To show the current frame of the project. You may quickly drag it into any desired frame. |
| 2 | Time Mode Switch | To switch to Realtime or By Frame mode for simulating physics. (for 3D actor only) |
| 3 | Wind Physics | To switch on/off physics effect or record physics animation. (for 3D actor only) |
| 4 | Play (Shortcut: Space bar) | To playback the current project. |
| 5 | Stop | To stop playback. |
| 6 | Jump to Start Frame | To jump to the cue frame of playback, or to the start frame of the project. |
| 7 | Previous Frame | To jump one frame backwards. |
| 8 | Next Frame | To jump one frame forwards. |
| 9 | Jump to End Frame | To jump to the cue-out frame of the playback, or to the end frame of the project. |
| 10 | Loop On/Off | To toggle playback loop on/off. |
| 11 | Time Settings | To show the current time/frame.
You may click the Time Settings  button to toggle between time display modes. <ul style="list-style-type: none">•  - Time Mode: Display time in mm:ss:ms format.•  - Frame Mode: Display frames. The unit is 30 frames/sec. |
| 12 | Show Timeline | Bring up the Timeline . |
| 13 | Voice Volume | To adjust the volume of the sound effect. |
| 14 | Music Volume | To adjust the volume of the background music. |
| 15 | Playback / Export Range | Drag the red triangles to determine the playback / export range. Please refer to the Time Settings section for more information. |

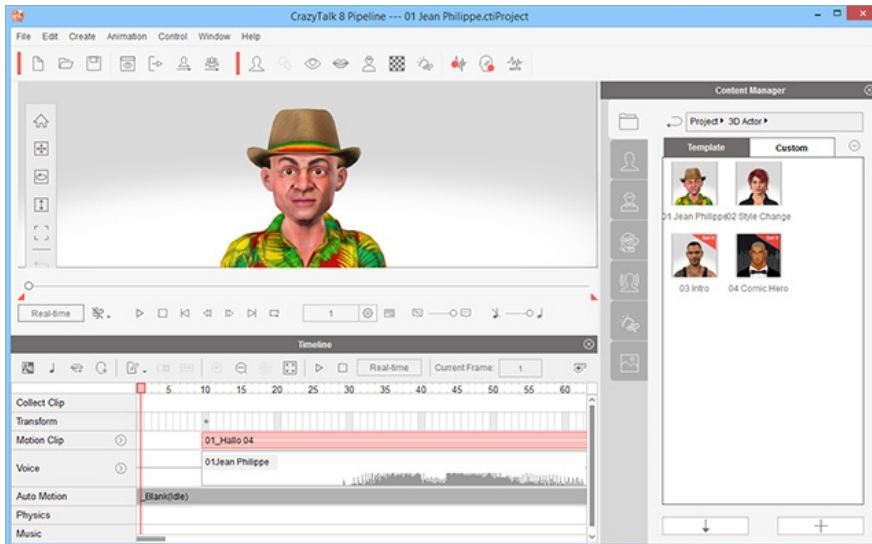
Docking Panels

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

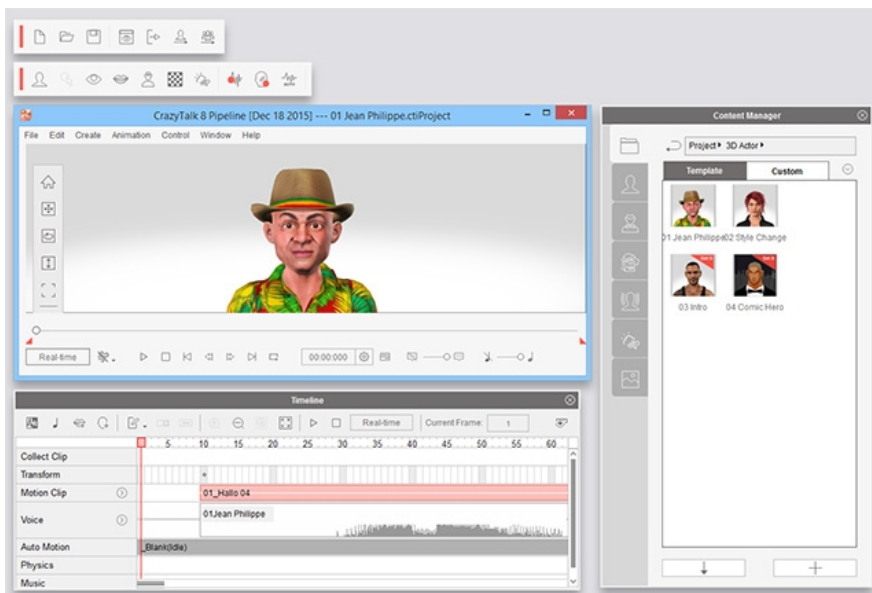
Panels Docked

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.



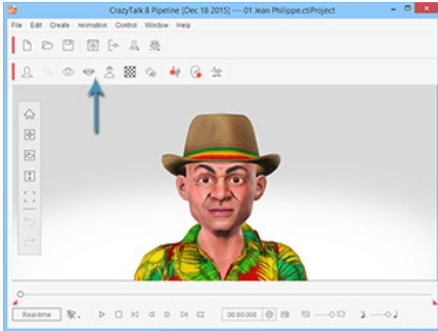
Panels Undocked

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.

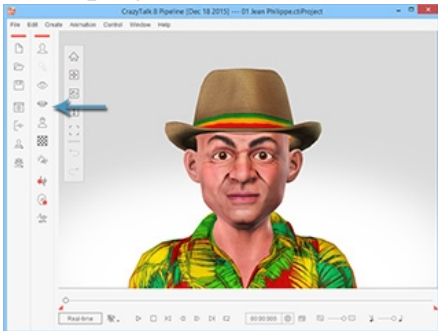


Dockable Area for Tool Bar

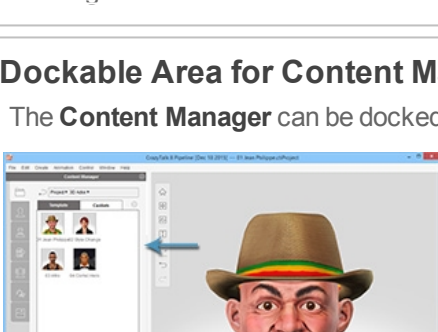
The **Tool Bar** can be docked to the top, bottom, left and right of the main program when you drag and drop it into the area.



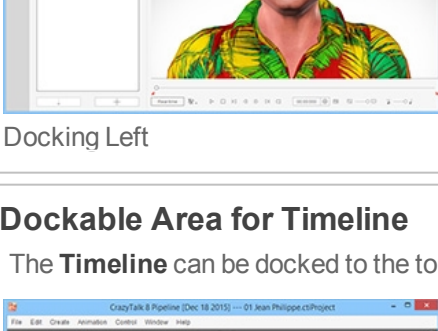
Docking Top



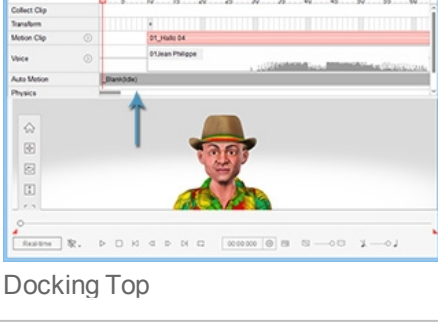
Docking Left



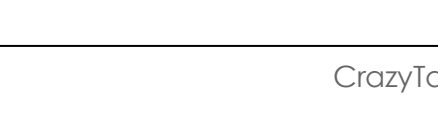
Docking Right



Docking Bottom



Docking Top



Docking Left

Docking Right

Docking Bottom

Docking Top

Docking Left

Docking Right

Docking Bottom

Docking Top

Docking Left

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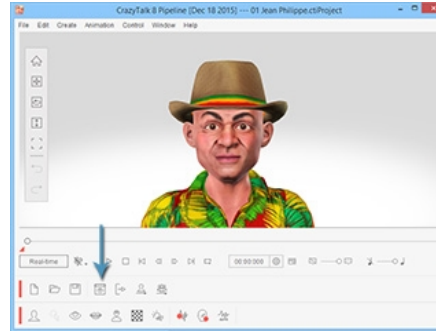
Docking Top

Docking Left

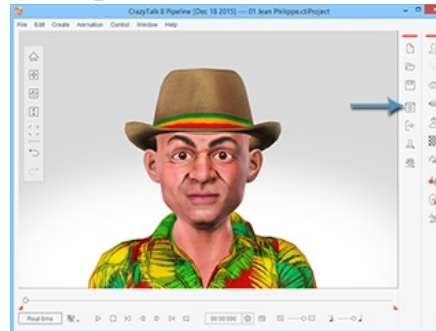
Docking Right

Docking Bottom

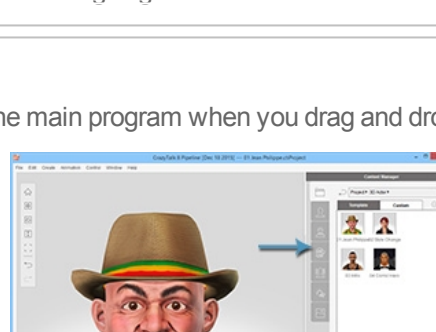
Docking Top



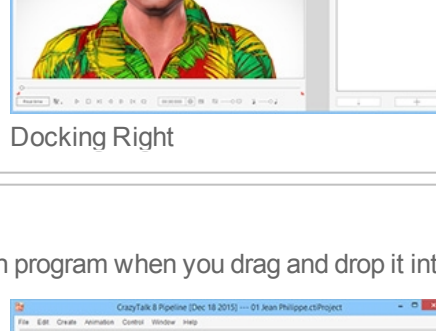
Docking Bottom



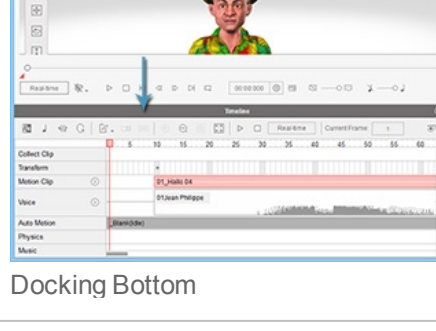
Docking Left



Docking Right



Docking Bottom



Docking Top



Docking Left

Docking Right

Docking Bottom

Docking Top

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Docking Bottom

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Docking Left

Docking Right

Docking Bottom

Docking Top

Docking Left

Drag and Drop

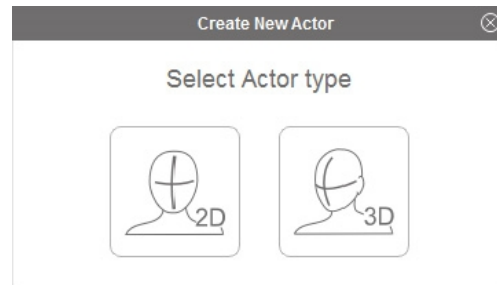
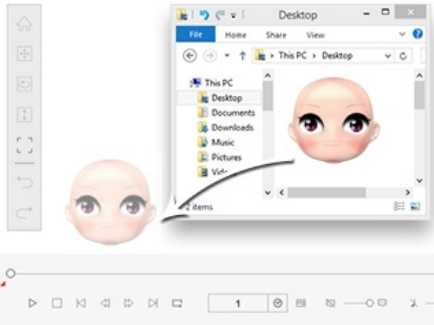
CrazyTalk provides several drag and drop methods to accelerate the building of your scene.

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 choose from the **Create New Actor** panel to create a new 2D or 3D character.



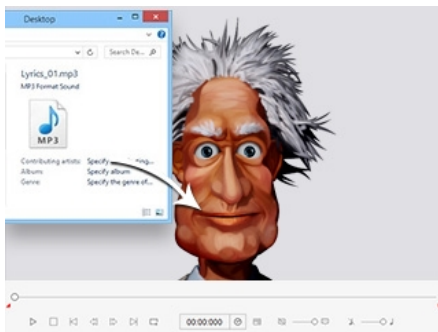
Drag and drop an image into the working area.

The **Create New Actor** panel shows.

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.

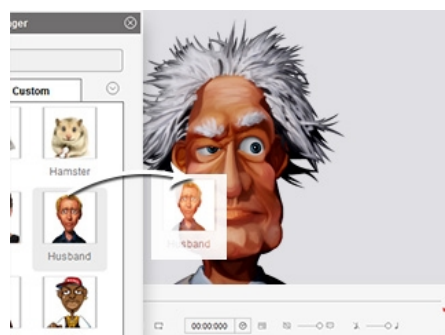


The character will start to talk, or listen independently from the motion that was manually applied.

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.

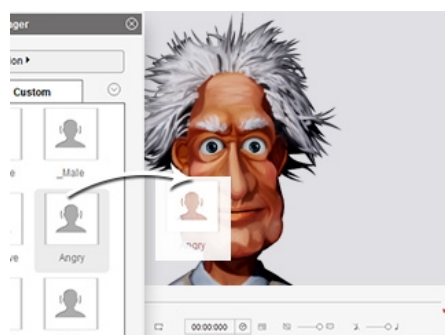
Note: You may also drag and drop from a folder to have the same results.



The actor will be replaced while the motion and the voice are kept.

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 actor.

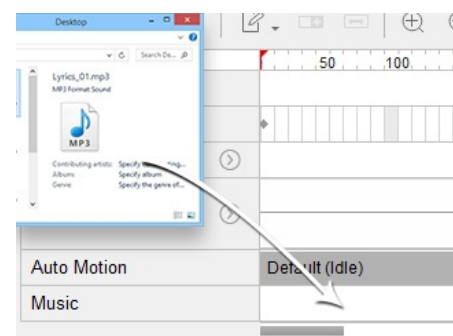
Note: You may also drag and drop from a folder to have the same results.



The actor will start the motion.

Background Music

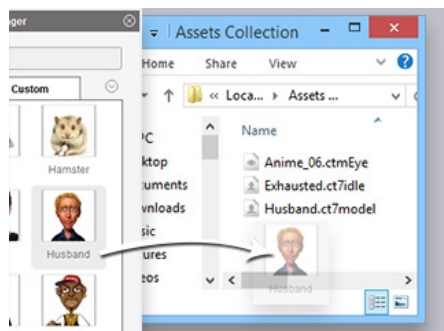
If you drag and drop an audio file onto the **Music** track in the **Timeline** (Shortcut: Windows - F3; Mac - fn + F3), then it will turn into background music.



Drag and drop an audio file onto the music track.

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

Item	File Format	Working Area	Drag and Drop Target Content Manager > Custom Library	External Directory
Project	.ctiproject, .ct7project	To open the project.	Move or save project to the Content Manager (Project Library) .	Move or save project to another directory.
Image	.jpg, .jpe, .jpeg, .png, .bmp, .tga, .gif	To start the Create New Actor wizard.	N/A	Move or save image to another directory.
Character	.ctiModel, .ct7Model	To replace the current character.	Move or save character to the Content Manager (Actor Library) .	Move or save character to another directory.
Actor Styles (for 3D Actor)	.ctiStyle	To replace the style of the current character.	Move or save teeth to the Content Manager (Actor Styles Library) .	Move or save style to another directory.
Eyes	.ctiEye, .ctmEye	To replace the eyes of the current character.	Move or save eyes to the Content Manager (Eye Library) .	Move or save eyes to another directory.
Teeth	.ctiTeeth, .ctmTeeth	To replace the teeth of the current character.	Move or save teeth to the Content Manager (Teeth Library) .	Move or save teeth to another directory.
Hair (for 3D Actor)	.ctiHair	To replace the hair of the current character.	Move or save teeth to the Content Manager (Hair Library) .	Move or save hair to another directory.
Accessory (for 3D Actor)	.ctiAccessory	To replace the accessory of the current character.	Move or save teeth to the Content Manager (Accessory Library) .	Move or save accessory to another directory.
Body (for 3D Actor)	.ctiBody	To replace the body of the current character.	Move or save teeth to the Content Manager (Body Library) .	Move or save body to another directory.
Motion (Idle motion, motion clips and script)	.ctiidle, .ct7idle .ctimotion, .ct7motion .ctiscript, .ct7script	To apply a motion onto the current character.	Move or save motion to the Content Manager (Idle Motion, Motion Clip or Script Library) .	Move or save motion to another directory.
Auto Motion Template	.ctiautomotion, .ct7-automotion	To auto-generate template motions for the current character.	Move or save template to the Content Manager (Auto Motion Library) .	Move or save template to another directory.
Atmosphere (for 3D Actor)	.ctiAtmosphere	To replace the atmosphere for the current project.	Move or save template to the Content Manager (Atmosphere Library) .	Move or save atmosphere to another directory.

CHAPTER 2

Project

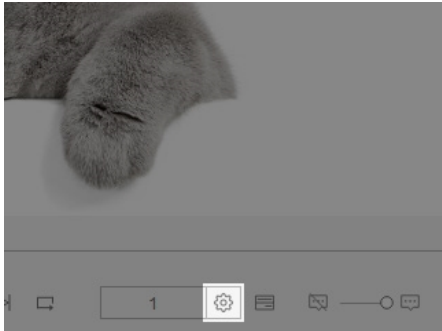
Time Settings

The **Time Settings** involve two aspects, the project length and the playback / export range of the project.

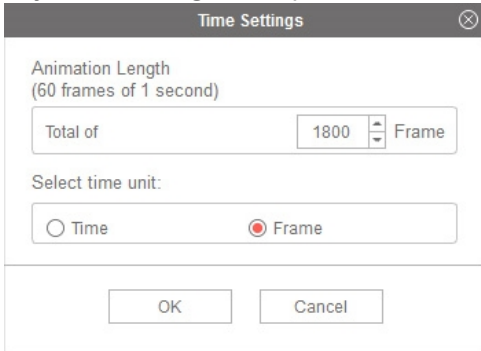
Project Length

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.

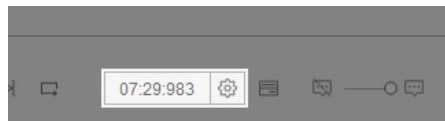
1. Click the **Time Settings** button to open the **Time Settings** panel.



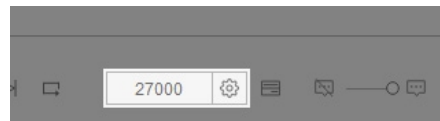
2. Adjust the settings in the panel:



3. **Animation Length:** Shows the total length of the project in frame count. The default length for each project is 1800 frames. The maximum frame number is 54000 (15 minutes).
4. **Select Time Unit:** You may decide to display the time unit in either frame format or time format.



Time-based Display

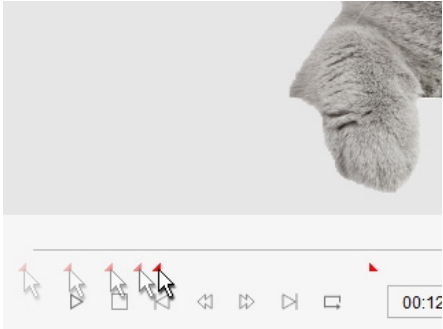


Frame-based Display

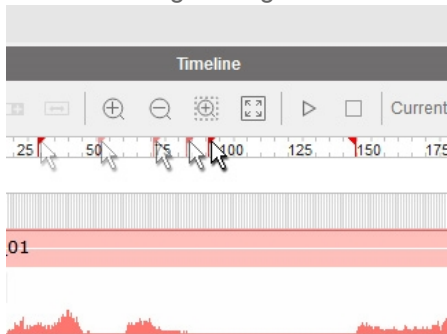
Project Playback / Export Range

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.




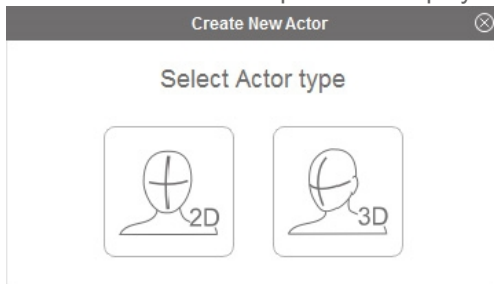
CHAPTER 3

Creating 2D Actor

CrazyTalk allows you to create a 2D 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 2D Actor

1. Click the **Create New Actor**  button on the toolbar.
2. The **Create New Actor** panel will display on the screen.



3. Click the **2D** button to start the procedure of creating 2D actor.
4. Load a desired image.



Recommended image (frontal and flat)



Not recommended image (angled with prominent perspective)

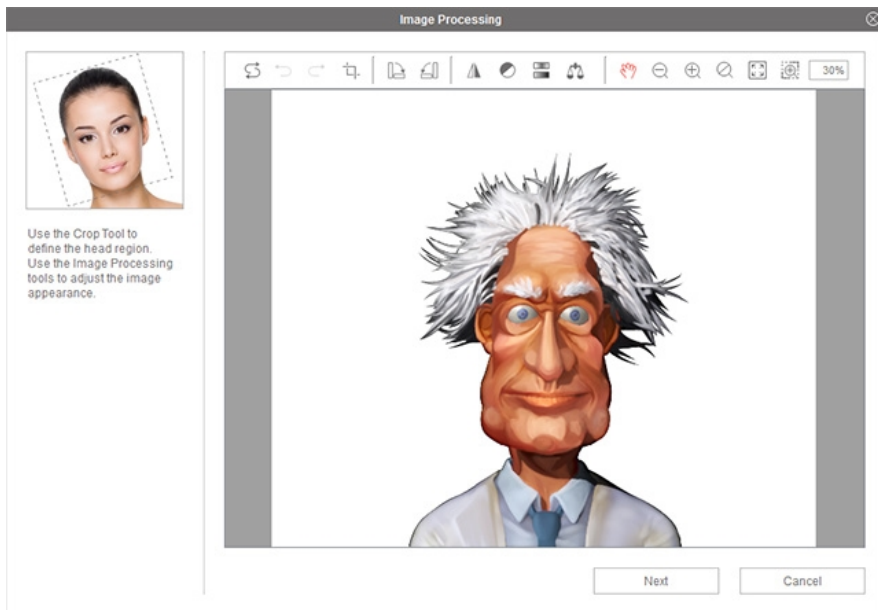
Note:

- 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.

5. The **Creating Actor Wizard** auto-starts and directs you to finish details for building a custom talking actor.
 - i. [Image Processing](#)
 - ii. [Auto Fit Anchor Points](#)
 - iii. [Face Fitting](#)
 - iv. [Specifying Face Orientation and Style](#)
6. Add virtual eyes and teeth for the actor.
 - [VividEye Technology](#)
 - [Mouth Settings](#)
7. Determine the foreground and background areas.
 - [Editing the Background Mask](#)
 - [Configuring the Background Settings](#)

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.

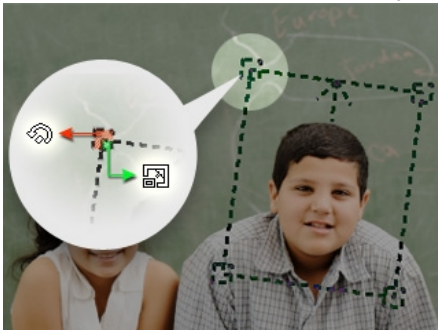


You may use the tools on the left side of the image processing menu to adjust the area, quality, and color settings of the image.

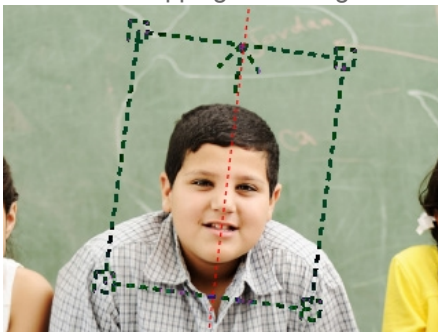
Cropping an image

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 Tool**  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  button when done. Click the  button to cancel the current crop box and restart.

Rotating and Flipping an image

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

Click the **Mirror**  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.




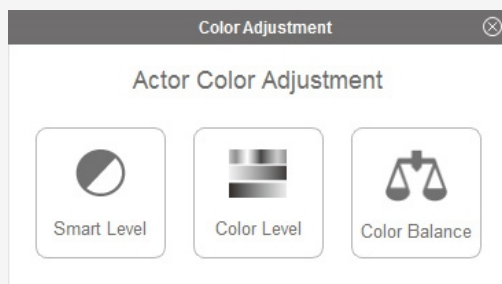
Before



After

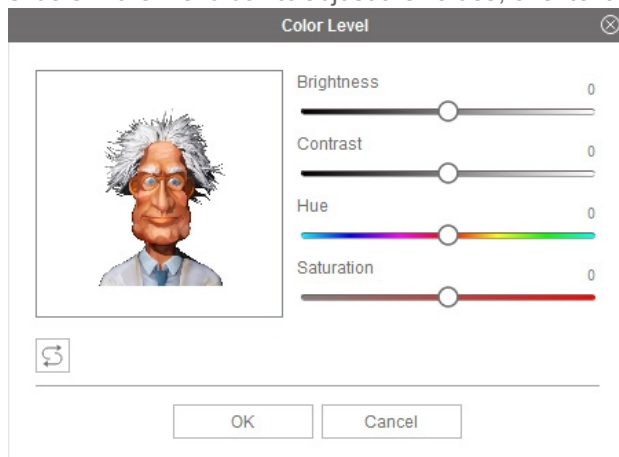
Note:

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:




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.



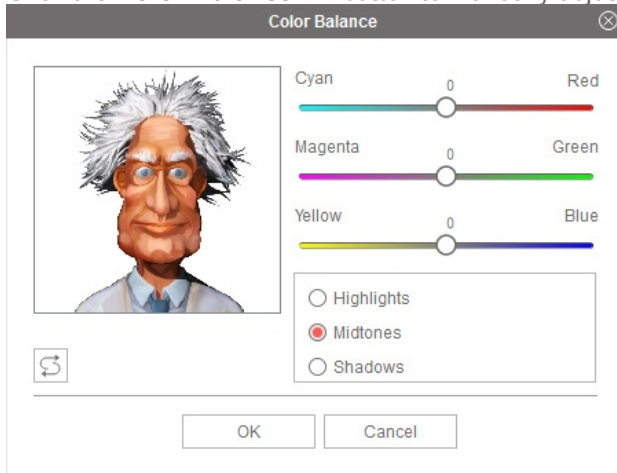
Note:

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:




Adjusting color balance

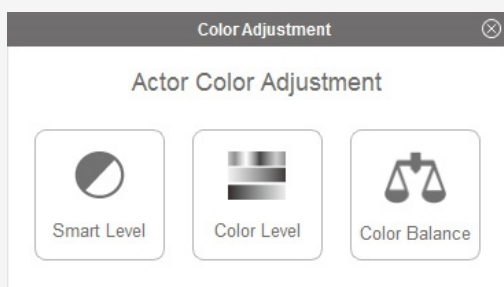
Click the **Color Balance**  button to manually adjust the color balance.



- 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.

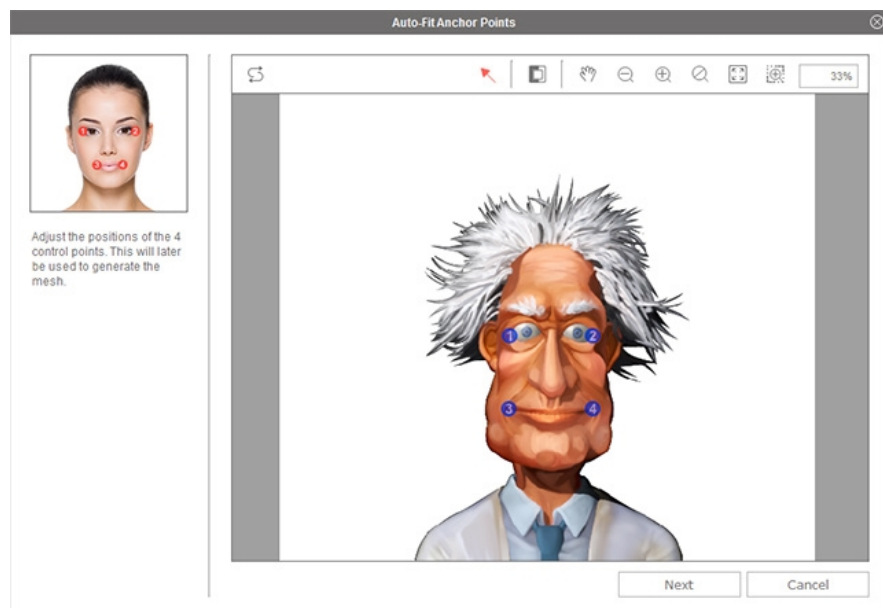
Note:

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.



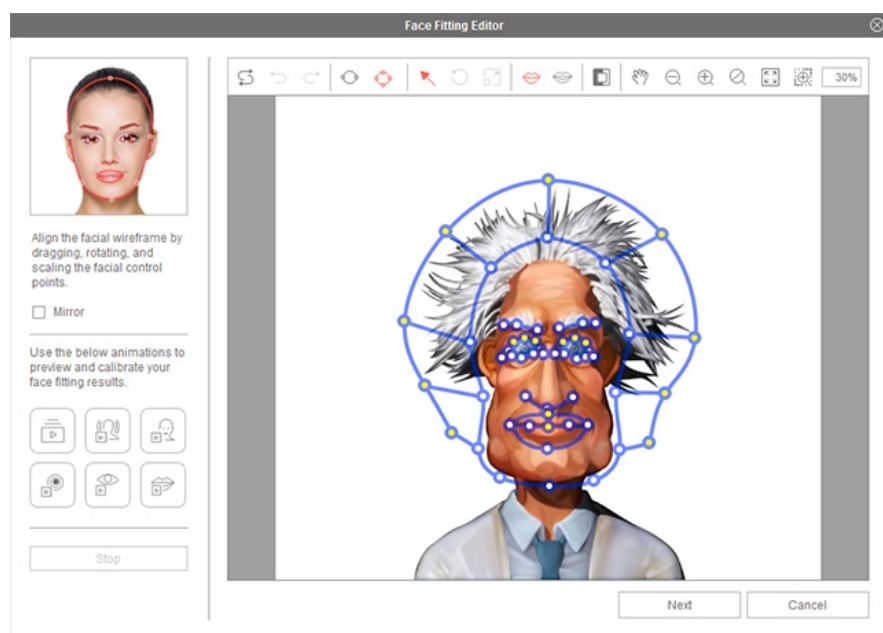
CrazyTalk has its own embedded estimation of the four points which define the eye and mouth areas. If you wish to move the positions, then you may click and move the numbered indicators 1, 2, 3 and 4, on the image. Do this to adjust the fitting process as displayed in the reference image. Click the **Reset**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

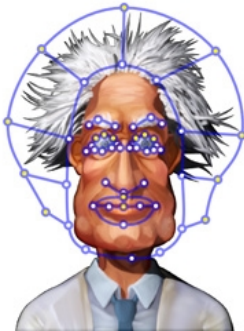


Basic Tools

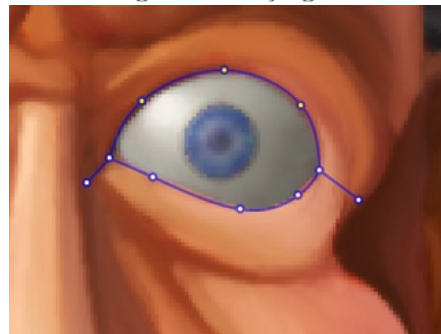
-  **Wire Color:** Click this button and cycle through different wire frame colors. This can be used if both the original image and the wire frames colors are the same color, as it would make it difficult to view and make corrections.
-  **Select:** Click this button to pick and move components of the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

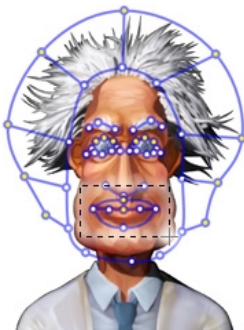


Before zoom in

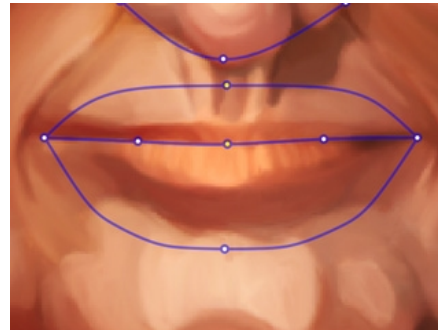


Zoom in for more easily modifying the details

-  **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

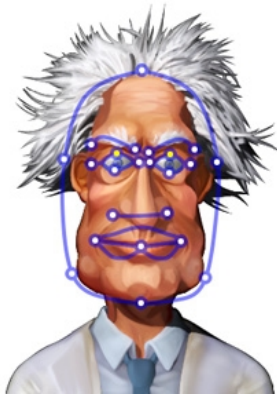



Zoom in for more easily modifying the details

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.

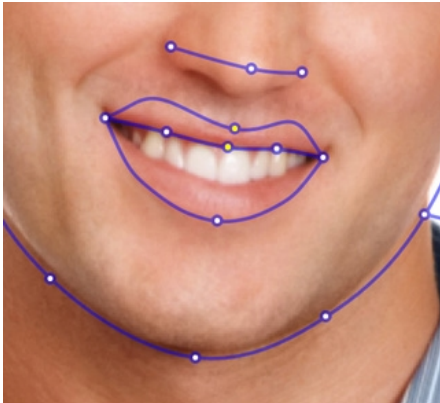




Note:

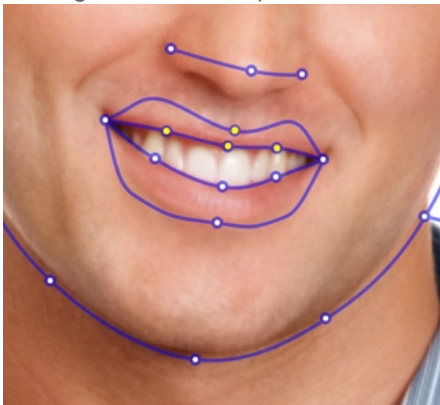
Please refer to the [Hair Mesh Layer](#) section for more information.

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.

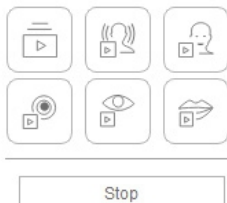


Note:

If you want the actor to close up the mouth, then you need to activate the **Force to Close** feature for the [Lips](#) in the **Teeth 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).

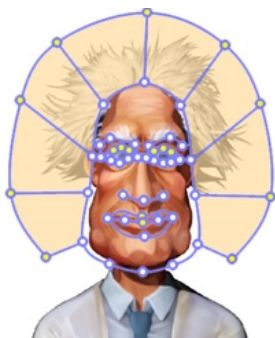


Character with fluffy hair.

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



Skull mesh

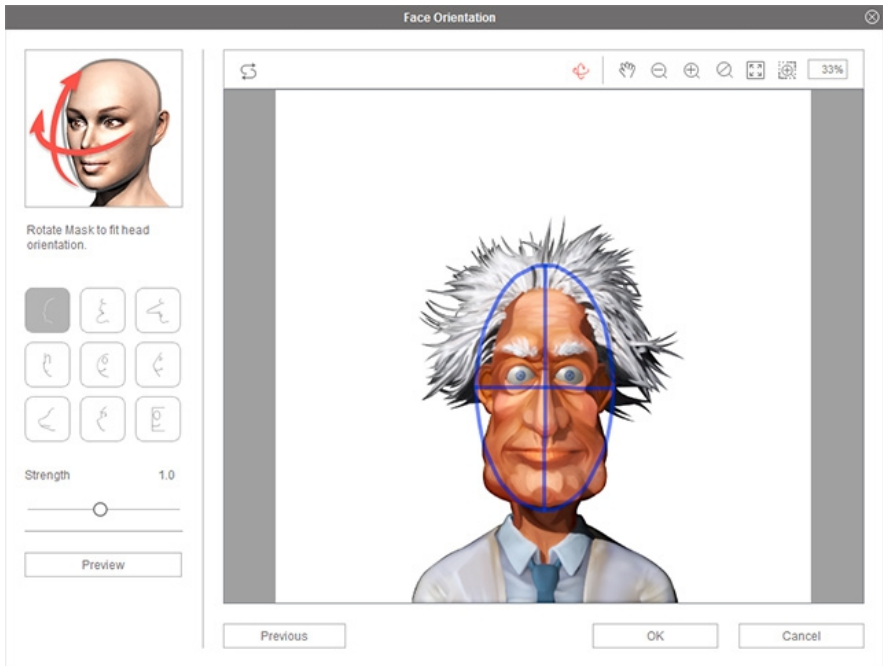


Hair mesh


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 Orientation**  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

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



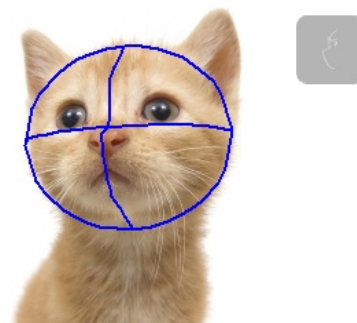
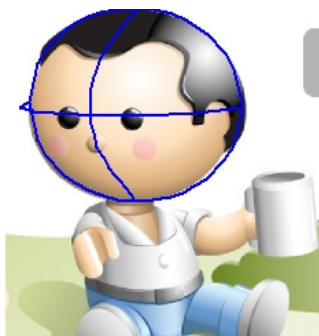
Strength 1.0



Preview

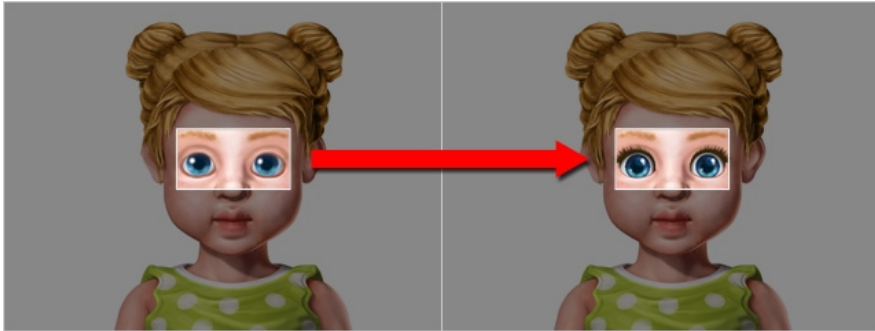
- Drag the **Strength** slider to adjust the intensity of the profile. The higher the value, the more accentuated the profile and motion of the character will be.
- Press the **Preview** button and move your mouse to preview the head motion in the main viewport. If the motion is not as desired, then re-adjust the **Strength** value or try another profile style.

Examples:



VividEye Technology

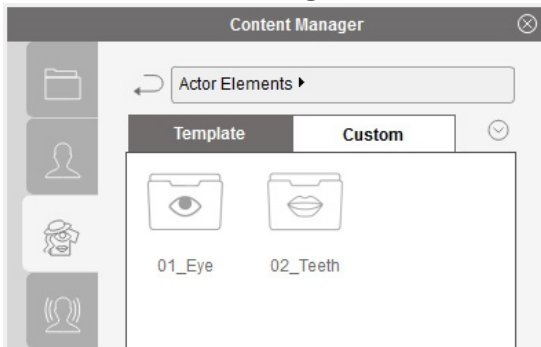
CrazyTalk introduces **VividEye Technology** in a layer-based concept. The 6 Layers (Eyeball - Iris, Eyeball - White, Eye Light, Eye Shadow, Eyelash and Makeup) in the **VividEye** Settings greatly increase the realism of virtual eyes. Original eyes from the source image cannot roll, so it is important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



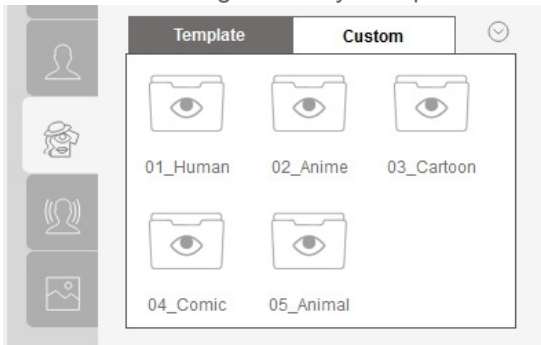
Using VividEye


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

1. Switch the **Content Manager** to **Actor Elements** >> **Template** tab >> **01_Eye** library.



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



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 Settings**  button at the tool bar to access the **Eye Settings** panel.
 - [Eyeball Transform](#)
 - [Eyeball Iris Color and Eyeball Whites](#)
 - [Eye Light](#)
 - [Eye Shadow](#)
 - [Eyelash](#)
 - [Makeup](#)
 - [Creating Custom Eyes](#)

Eye Template Gallery

CrazyTalk provides a virtual eye template gallery to match design styles with **VividEye** templates.




For 2D Actors




Human




Content Manager

Actor Elements ▶ 01_Eye ▶ 01_Human ▶

Template Custom


_M01_Normal _M02_Faded _M03_Sharp




_M04_Sexy _M05_Brown _M06_Pirate


F01_Normal F02_Faded F03_Sharp



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Original Eyes



Virtual Eyes Applied



Eye Makeup Applied









Anime Character




Content Manager

Actor Elements ▶ 01_Eye ▶ 02_Anime ▶

Template Custom


Anime_01 Anime_02 Anime_03

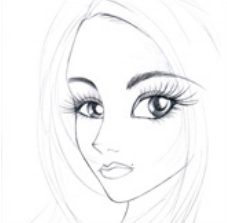


Anime_04 Anime_05 Anime_06


Anime_07 Anime_08 Anime_09

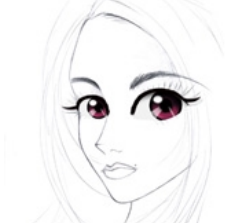

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Original Eyes



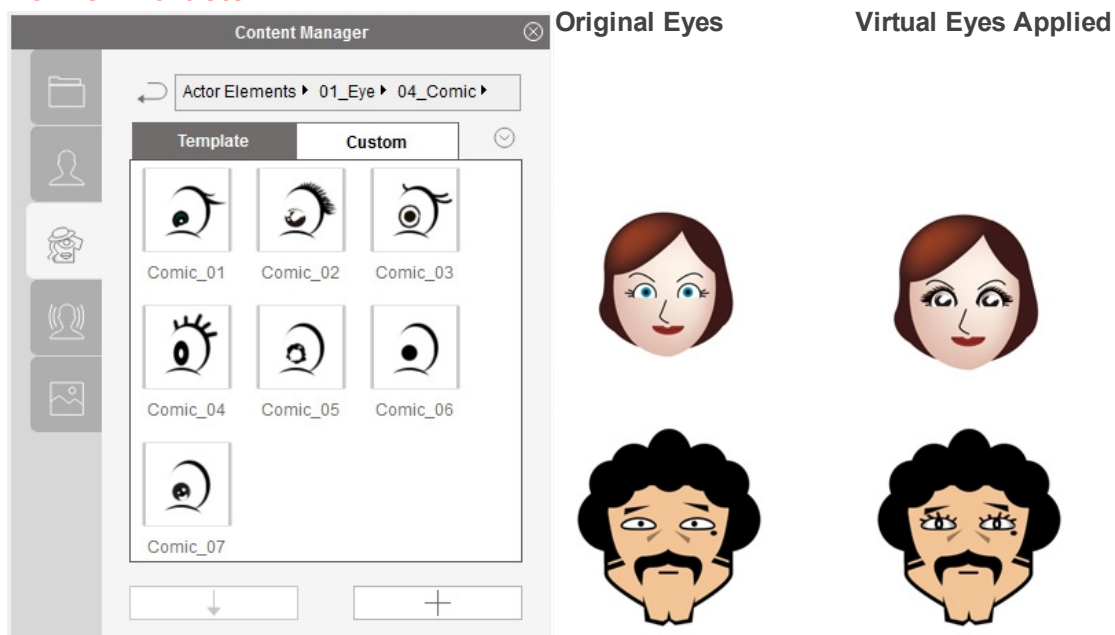
Virtual Eyes Applied



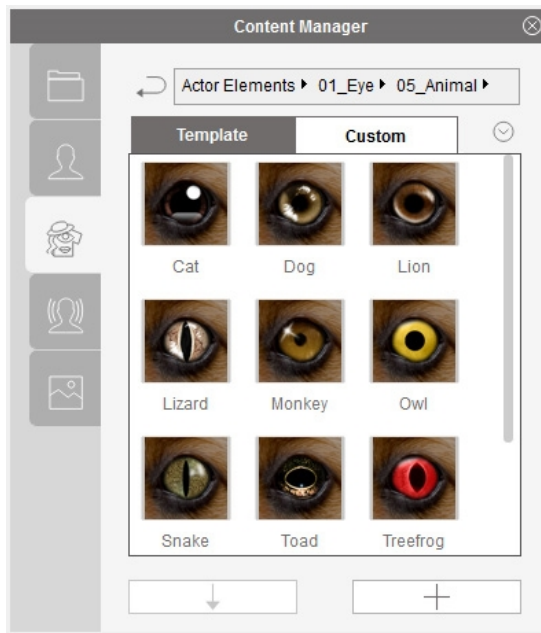
Cartoon Character



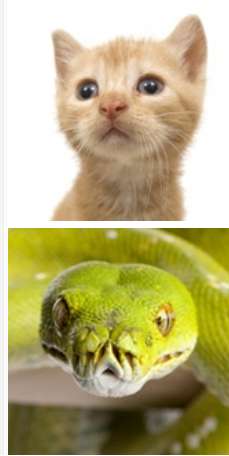
Comic Character



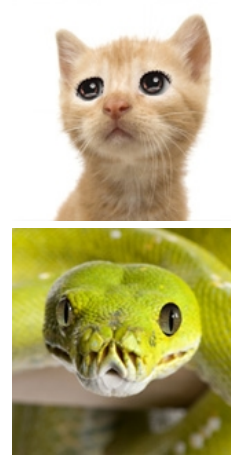
Animal



Original Eyes

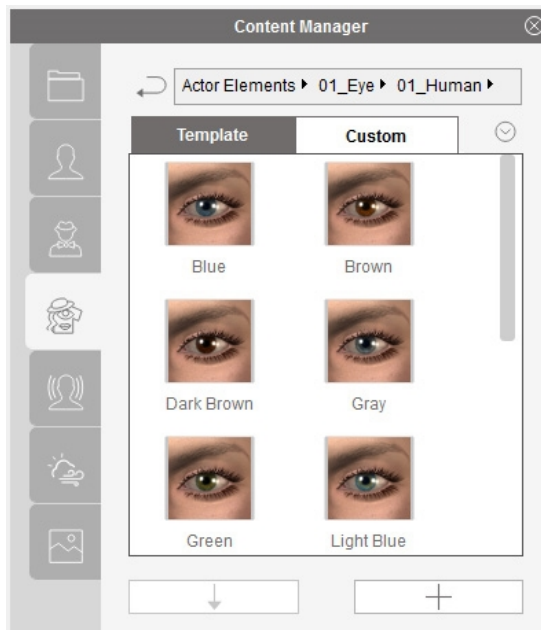


Virtual Eyes Applied



For 3D Actors

Human



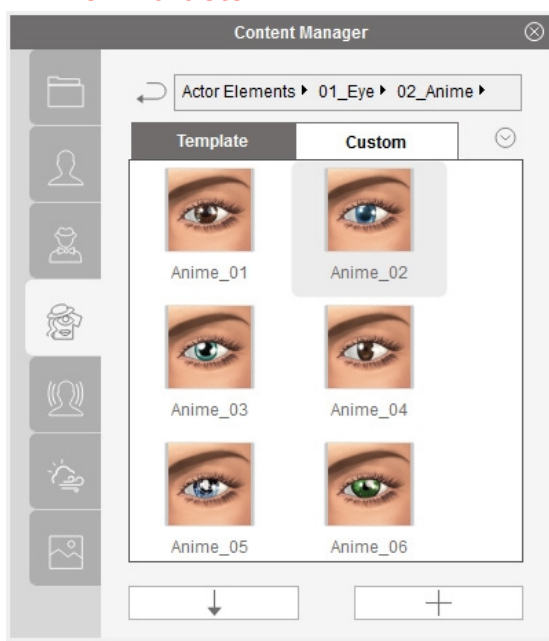
Original Eyes



Virtual Eyes Applied

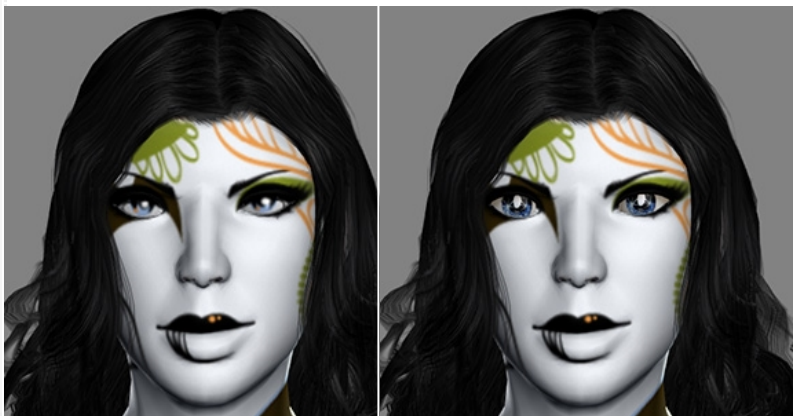


Anime Character

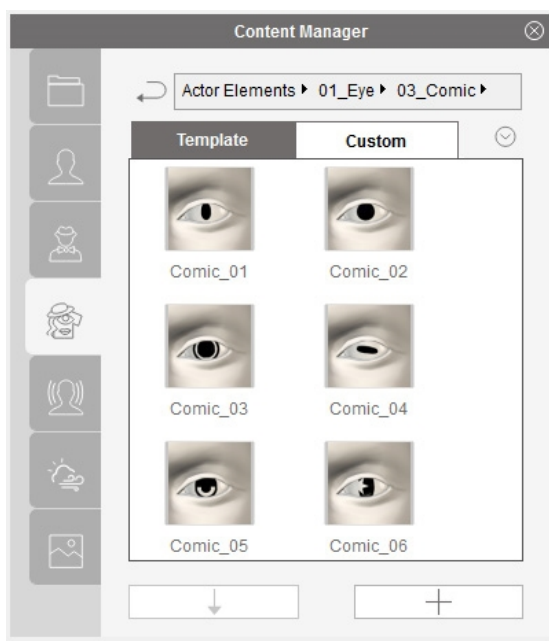


Original Eyes

Virtual Eyes Applied

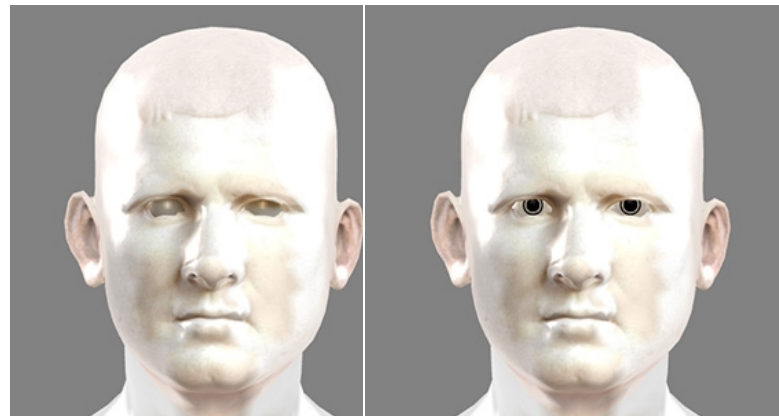


Comic Character

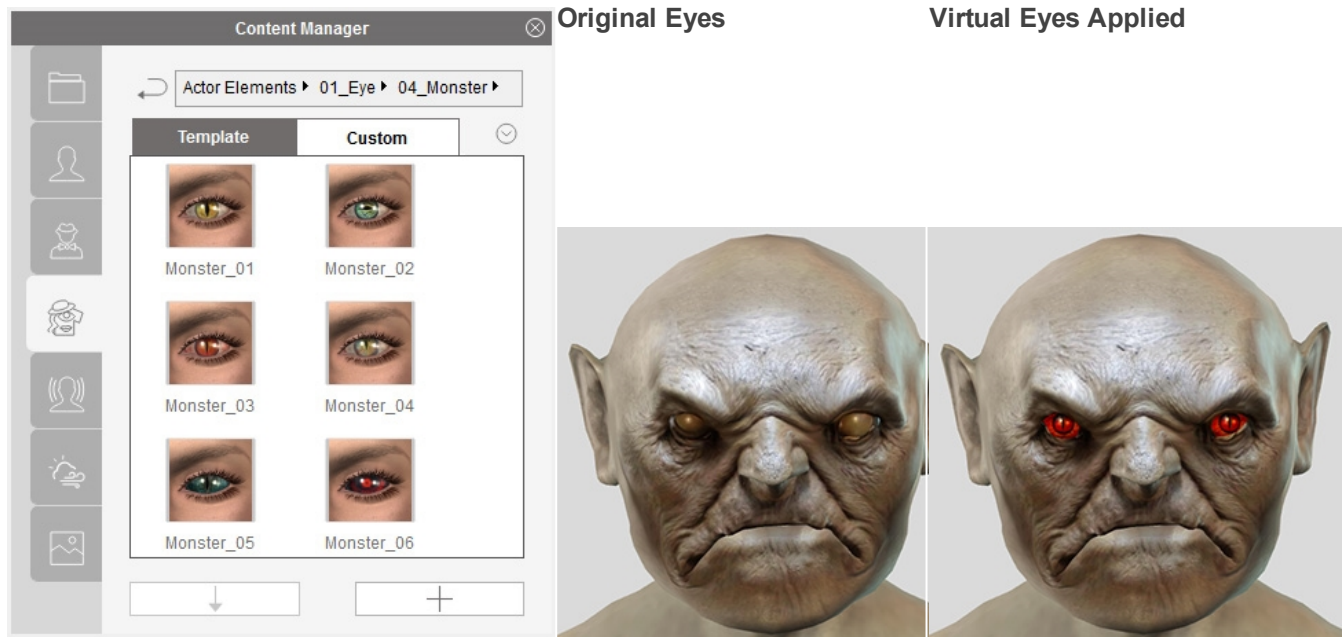


Original Eyes

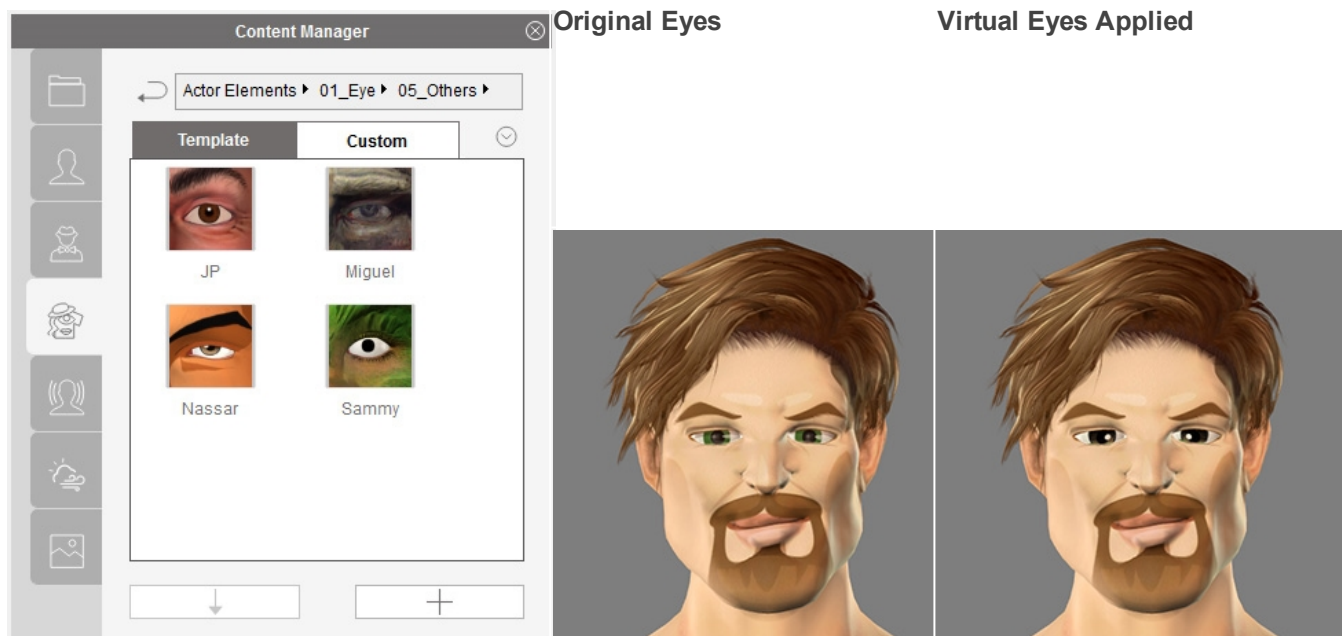
Virtual Eyes Applied



Monster



Others

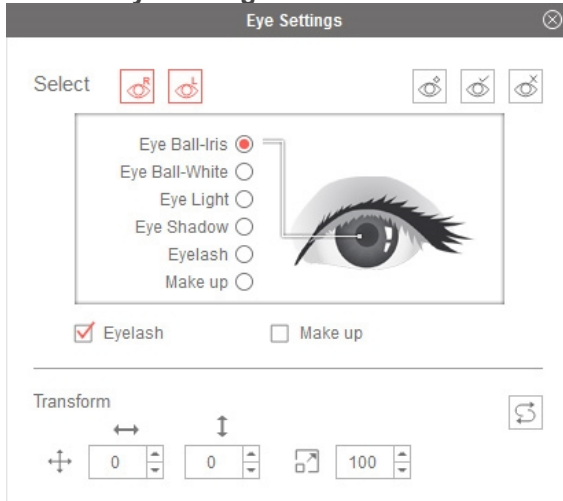


Eyeball Transform

After [applying an eye template](#), you may adjust the size and the location of the eyeballs.

Transforming Eyeball

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



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




Left eye



Right eye



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. You may click and keep the **Check Eyes**  button pressed to compare with the original.




Before being transformed



After being transformed

Note:

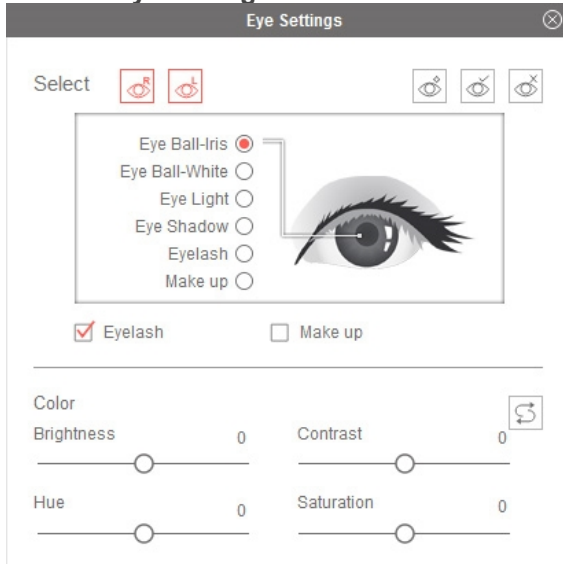
If you find the eyeballs are not in an ideal position or scale during playback, then you may pause and open the **Eye Settings** panel and then press down the **Current Eyes**  button to modify according to the current eyeballs at the time frame.

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 Settings**  button at the tool bar to access the **Eye Settings** panel.



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




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**. You may click and keep the **Check Eyes**  button pressed to compare with the original.



Before being adjusted



After being adjusted

Eye Light

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

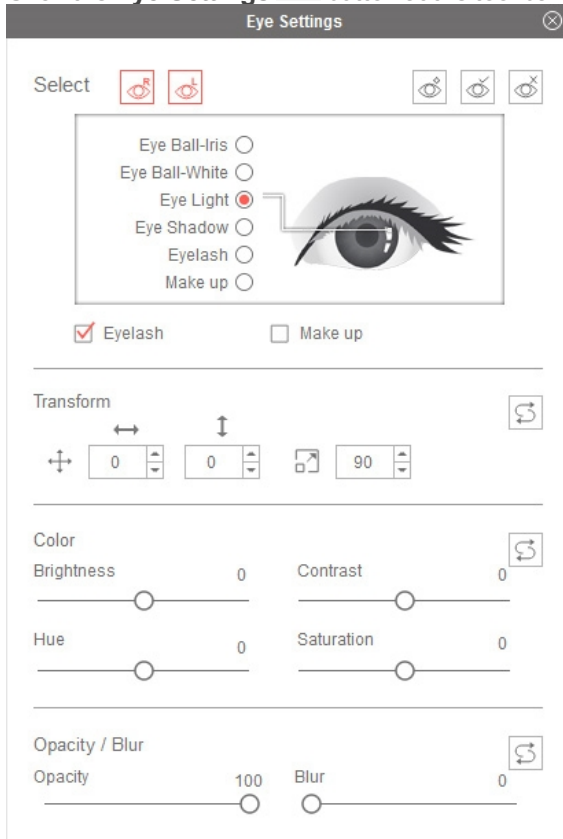
Setting Eye Light

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 Settings**  button at the tool bar to access the **Eye Settings** panel.



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



Left eye



Right eye



Both eyes

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.



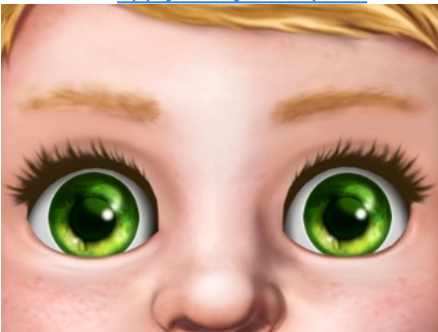
Eye Shadow

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.

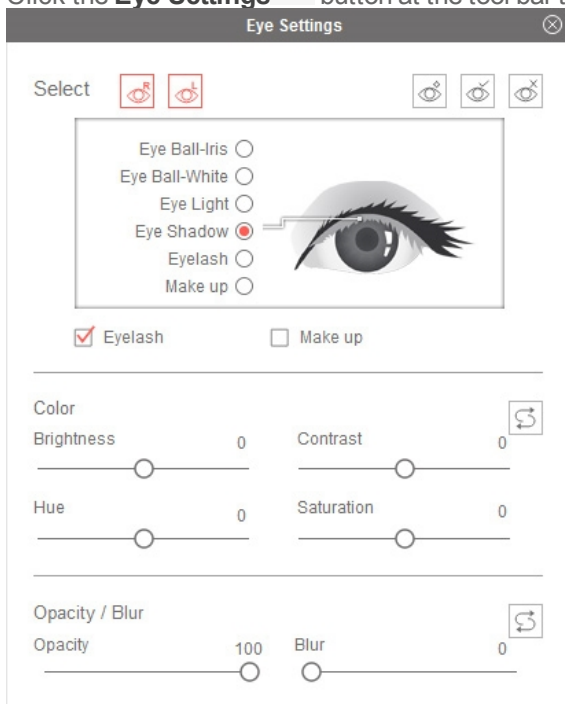
Setting the Sphere Sense of the Eyeball

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 Settings**  button at the tool bar to access the **Eye Settings** panel.



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



Left eye



Right eye

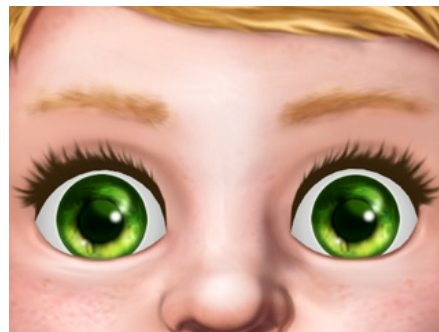


Both eyes

4. Choose the **Eye Shadow** radio button.
5. Adjust the sliders in the **Color** and **Opacity/Blur** sections.



Heavy shadow (spherical eyeball)




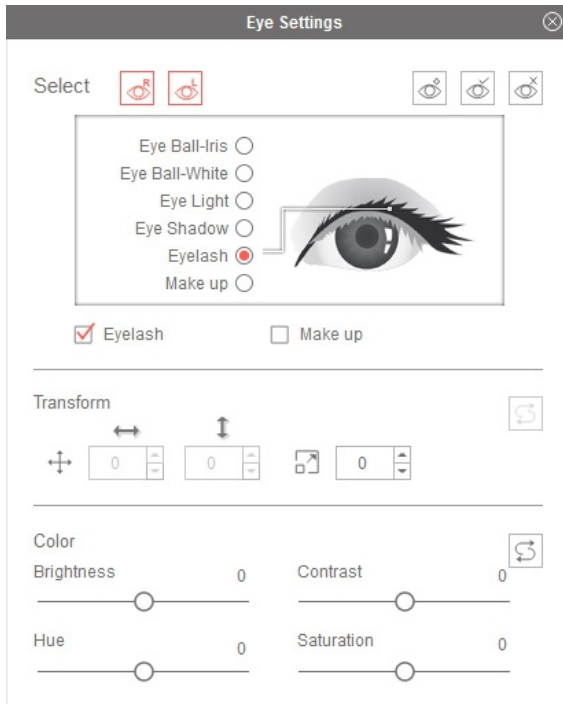
No shadow (flat eyeball)

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 Settings**  button at the tool bar to access the **Eye Settings** panel.



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

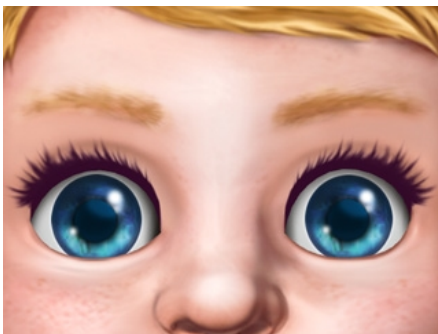


Without Eyelashes



With Eyelashes

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 eye-lashes.



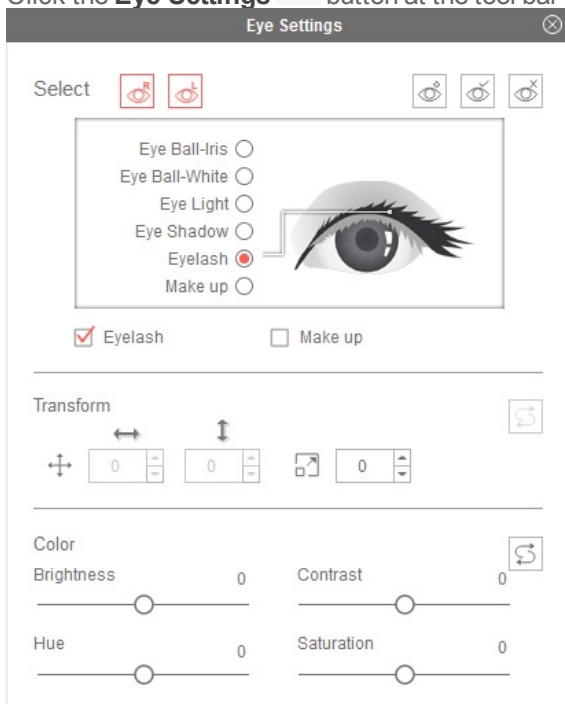
Note:

Click and keep the **Close Eyes** button pressed in order to view the **Eyelash** with closed eyes.

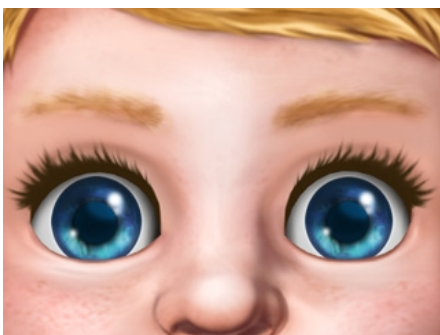


Adjusting the Length of Eyelash

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



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



Normal eyelashes




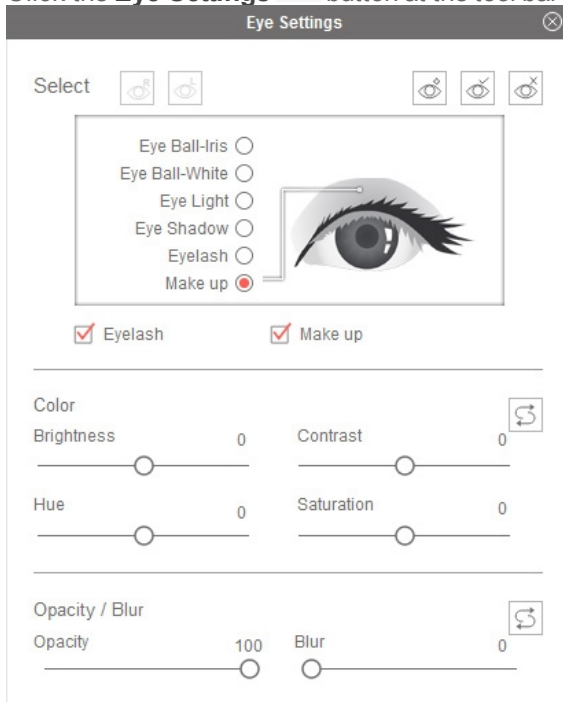
Longer eyelashes

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 Settings**  button at the tool bar to access the **Eye Settings** panel.



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

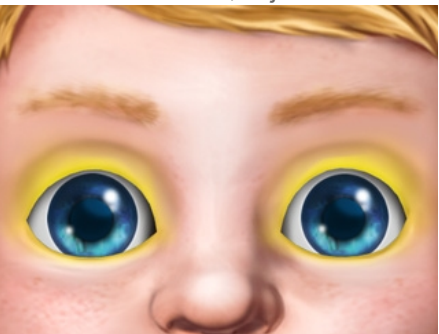


Without Makeup



With Makeup

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 Eyes** button pressed in order to view the **Makeup** effect when eyes are closed.



The Benefits of Makeup

Adding Eye Cosmetics and Eyelashes



Original image



With Makeup

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.



Original image



Well-fitted Eye wires

2. Change the eyes' wires to change the shape of the eyes. You may see the new eyelids mapped over the original image.



Change eye shapes



Result

3. Apply the **Makeup** effect to conceal the original eye image.



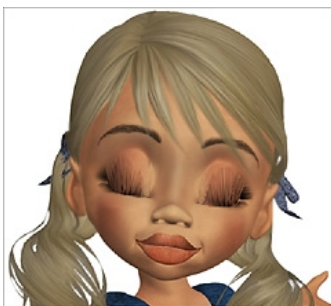
Eye shadow applied



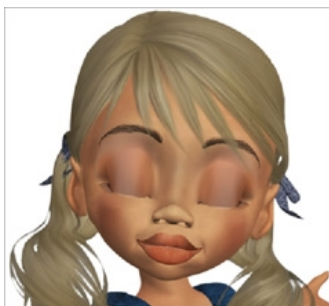
Eyelash applied

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.

Creating Custom Eyes

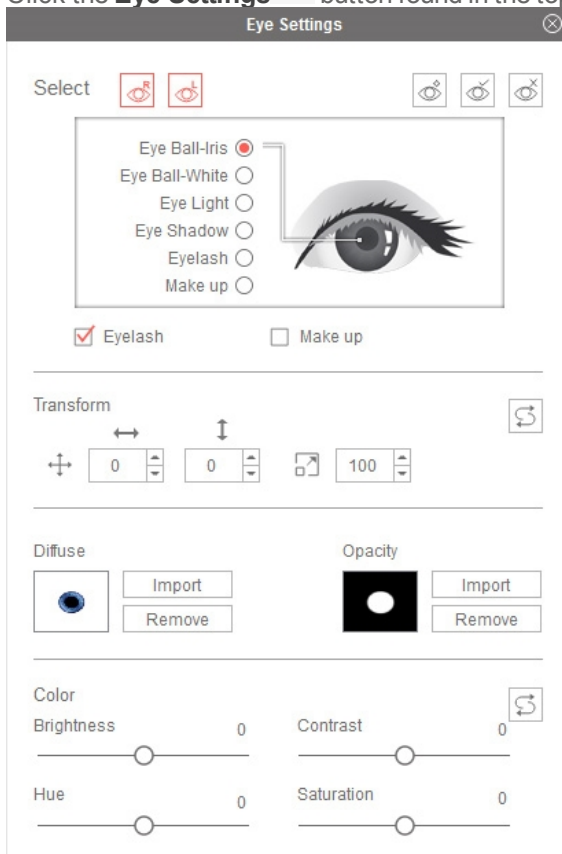
You may create your own character eyes with the **Diffuse** and **Opacity** channels, to which you can import an eyeball image and a grayscale image to design custom iris and light shapes. You can even add eye shadows, eyelashes, and makeup effects of your own.

Creating Custom Eyeballs

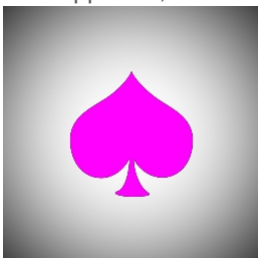
1. First prepare a model and [apply an eye template](#) from the eye gallery.



2. Click the **Eye Settings**  button found in the top Tool Bar to access the **Eye Settings** panel.

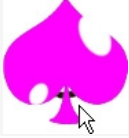


3. Choose the **Eyeball - Iris** radio button.
4. In the **Diffuse** channel, click the **Import** button to load the texture image for virtual eyes. (jpg, jpe, jpeg, bmp, tga, png are supported, 256x256 pixels recommended)

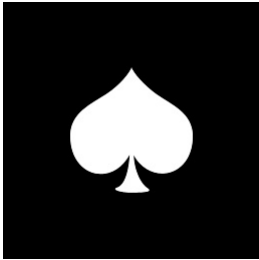



Note:

- It is **not recommended** that you import an image with an alpha channel since the alpha channel will be transparent and you will see the background image through it.
- If you wish to adjust the color of the iris, do not load a grayscale image for the eyeballs.
- If your iris image is smaller and it reveals the original one, then choose the **Eyeball - White** radio button and then load the same texture image in the **Diffuse** channel.



5. In the **Opacity** channel, click the **Import** button to load the grayscale image that will decide the area of the iris. The black part will be the masked area; the white part will be fully displayed.



6. In the **Transform** section, adjust the **Move** or **Scale** values to decide the size of the eyeball. You may click and keep the **Check Eyes**  button pressed in order to compare with the original.
7. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.




Before importing a custom eyeball image

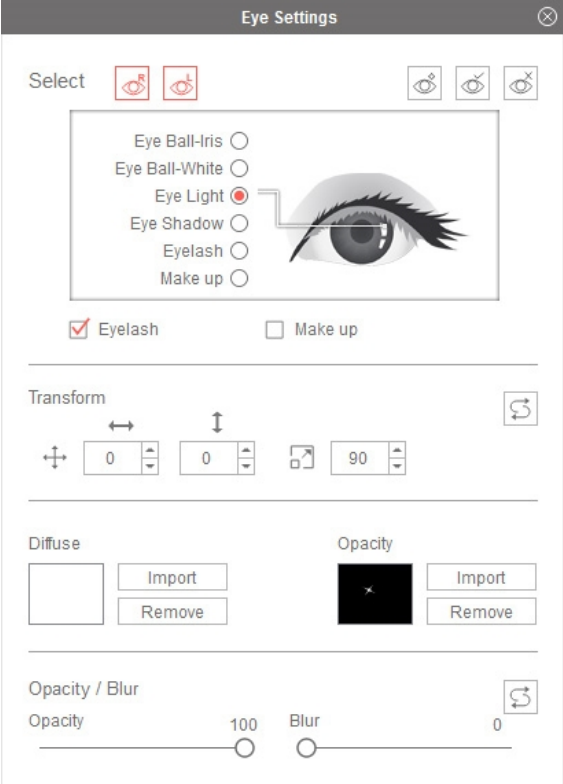


After importing a custom eyeball image

Designing the Light Shape

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

1. Click the **Eye Settings**  button at the top Tool Bar to access the **Eye Settings** panel.



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



Left eye

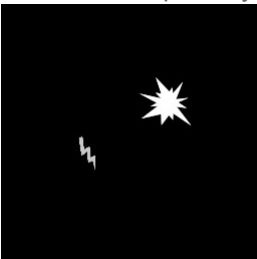


Right eye



Both eyes

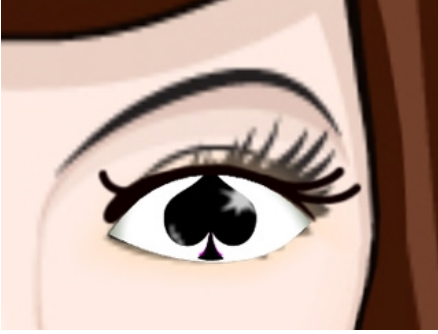
3. Choose the **Eye Light** radio button.
4. In the **Opacity** channel, click the **Import** button to load a grayscale image that will decide the shape of the eye light and imply the direction of the light. The black part will get cut out; the white part will be fully displayed; the gray values determine the transparency (alpha) level of the object.



5. In the **Transform** section, adjust the position and the size of the eye light.



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



Before importing custom eye light shape



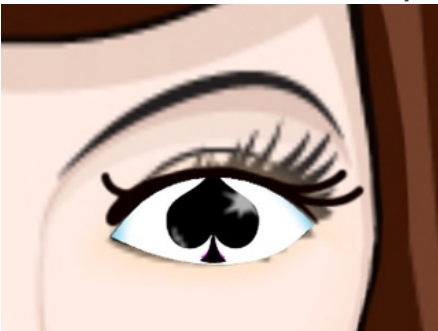
After importing custom eye light shape

Adding Eye Shadow, Eyelashes and Makeup

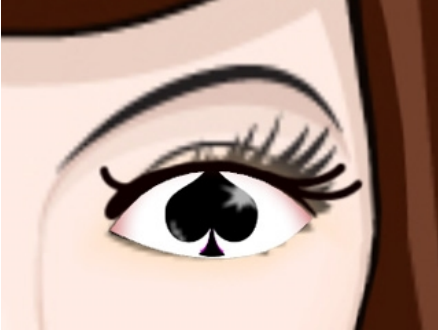
After creating custom eyeballs and designing the light shape in the previous sections, you may then follow the same rules to add eye shadows, eyelashes, and makeup effects.



1. Choose the **Eye Shadow** radio button.
2. In the **Diffuse** channel, click the **Import** button to load an image of solid color that will imply the color of the dark area.






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





4. In the **Opacity/Blur** section, adjust the value of the **Opacity** and **Blur** to decrease the overall-sharpness appearance.
5. Choose the **Eyelash** radio button, and [adjust the length of the eyelashes](#).

Note:

- The default image of the **Diffuse** and **Opacity** channels  represent the eyelashes of the left and right eyes.
- When you adjust an individual eye, the default image of the **Diffuse** channel  and the **Opacity** channel  represent the open and closed eyes.
- Because you cannot measure the distance between the left eye and the right eye, then it is **not recommended** to import custom images through the **Diffuse** and **Opacity** channels.

6. Choose the **Make up** radio button, and [adjust the makeup](#).

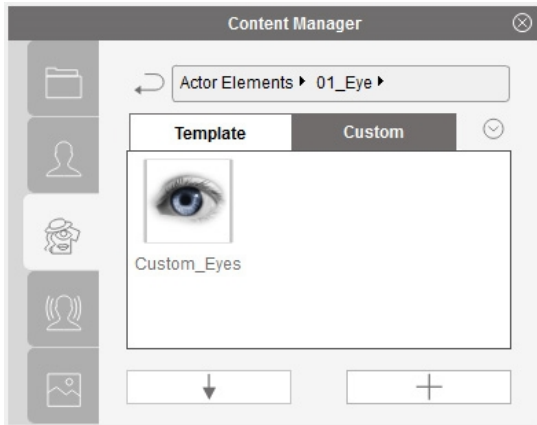
Note:

- The default image of the **Diffuse** channel  and the **Opacity** channel  represent the makeup of the left and right eyes.
- Because you cannot measure the distance between the left eye and the right eye, then it is **not recommended** to import custom images through the **Diffuse** and **Opacity** channels.

7. Now the custom eyes are done.



8. Switch the **Content Manager** to **Actor Elements >> 01_Eye**, and add the custom eyes into the **Custom Library** for future use.



Mouth Settings

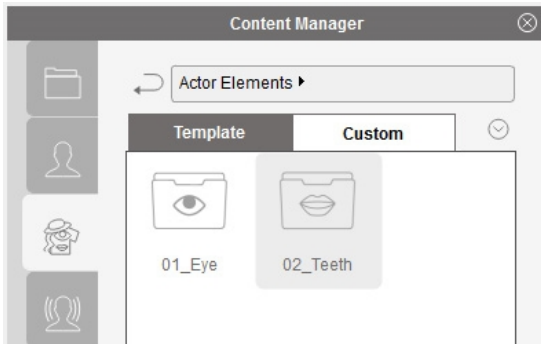
Every character in **CrazyTalk** is able to talk. You may apply a virtual mouth with teeth, along with modifying the mouth color and lips settings on the character.



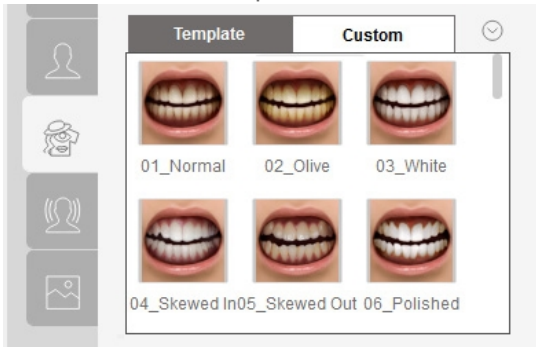
Applying Mouth Template

There are various types of teeth templates designed for real human, non-human creatures, or comic characters. **CrazyTalk** has enhanced the visual results and provides more unique templates for different age group (adult, child, or toddler) and teeth conditions (well or poorly aligned).

1. Switch the **Content Manager** to **Actor Elements** >> **Template** tab >> **02_Teeth** library.




2. You will see teeth templates.



3. Apply one of the templates from the **Template** library.



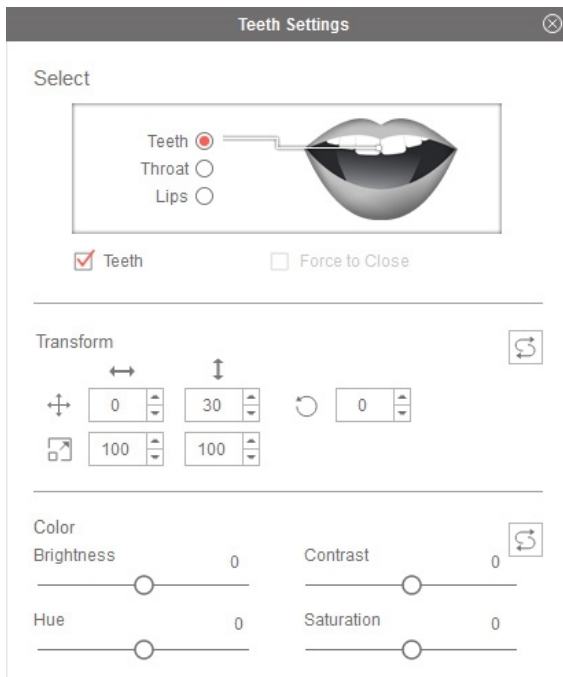
4. Click the **Teeth Settings**  button at the tool bar to access the **Teeth Settings** panel.
 - [Teeth](#)
 - [Throat](#)
 - [Lips](#)
 - [Creating Custom Teeth](#)

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

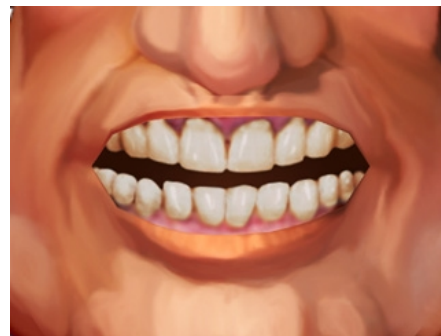
1. Click the **Teeth Settings**  button at the tool bar to access the **Teeth Settings** panel.



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.



Oversized Teeth

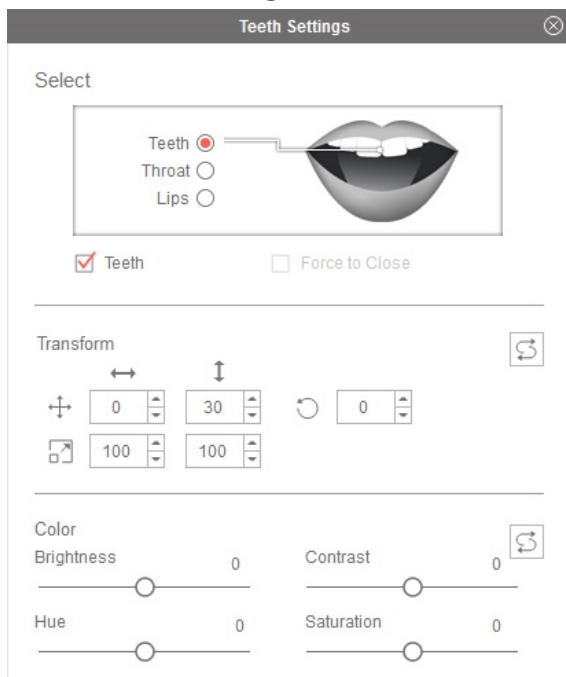


Scaled Teeth

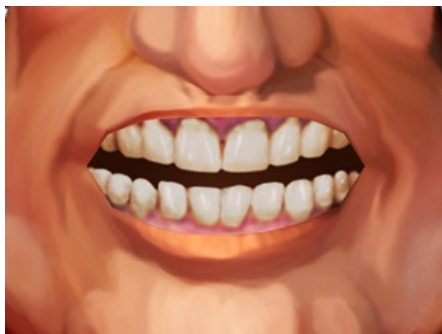
3. Use the **Rotate** value to decide the orientation of the teeth and match the angle of the mouth.

Teeth Color

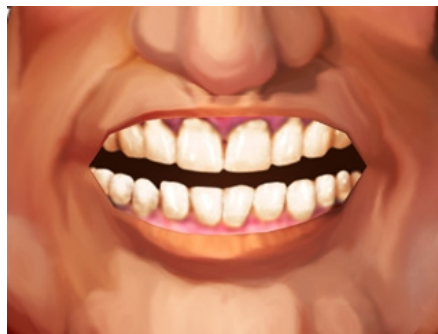
1. Click the **Teeth Settings**  button at the tool bar to access the **Teeth Settings** panel.



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



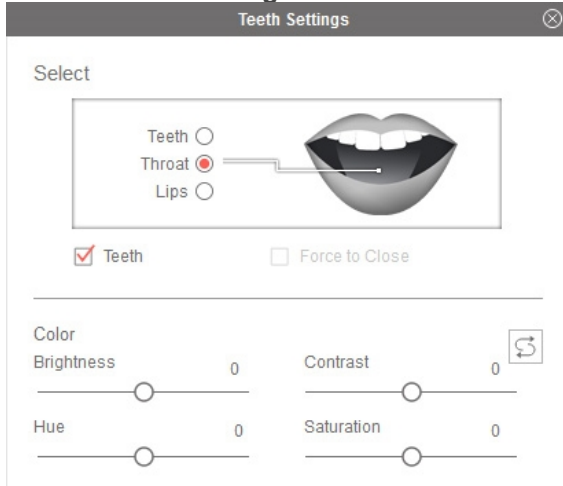
Teeth whitened

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

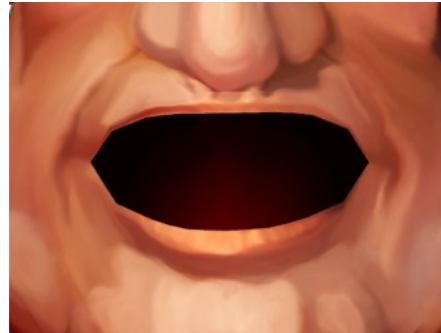
1. Click the **Teeth Settings**  button at the tool bar to access the **Teeth Settings** panel.



2. Choose the **Throat** radio button.
3. In the **Color** section, adjust the value of the **Brightness**, **Contrast**, **Hue** and **Saturation**.



Narrow throat



Deep throat

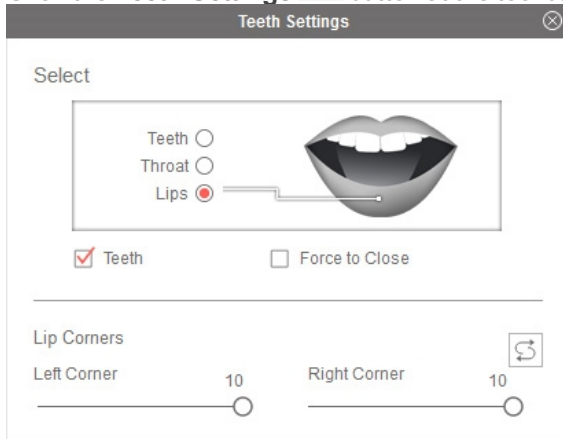
Lips

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.

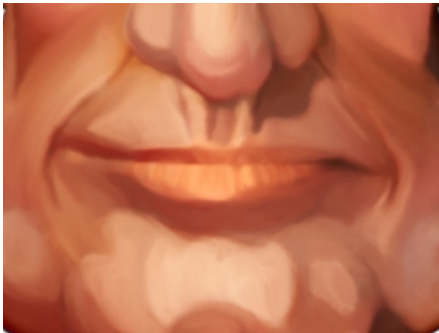
After you [apply a virtual mouth](#), you may modify the corners of the lips.

Leveling the Lip Corners

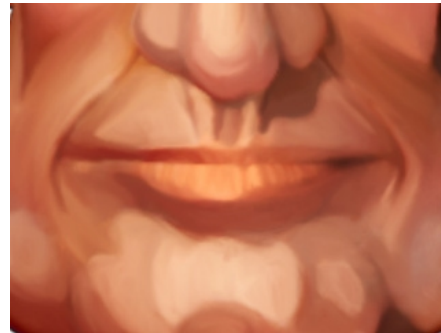
1. Click the **Teeth Settings**  button at the tool bar to access the **Teeth Settings** panel.



2. Choose the **Lips** radio button.
3. In the **Lips Corners** section, adjust the position values of the **Left Corner** and **Right Corner**.




Before adjusted

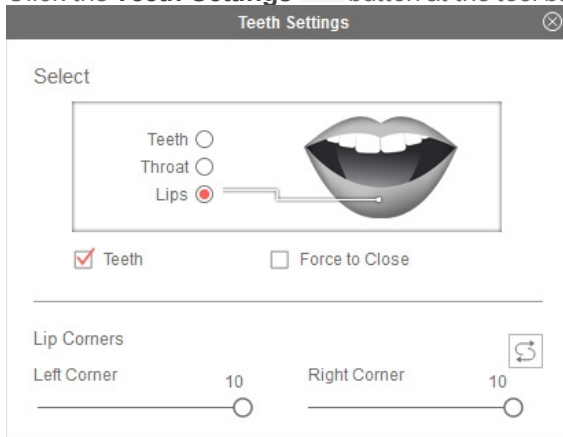


Lip corners are adjusted

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



3. Activate the **Force to Close** box to close the character's mouth.



Original Image



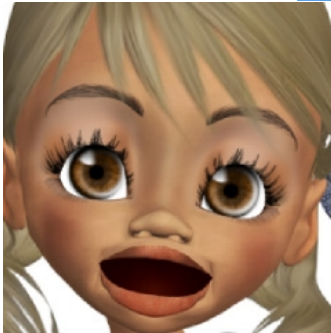
Force to Close: **ON**

Creating Custom Teeth

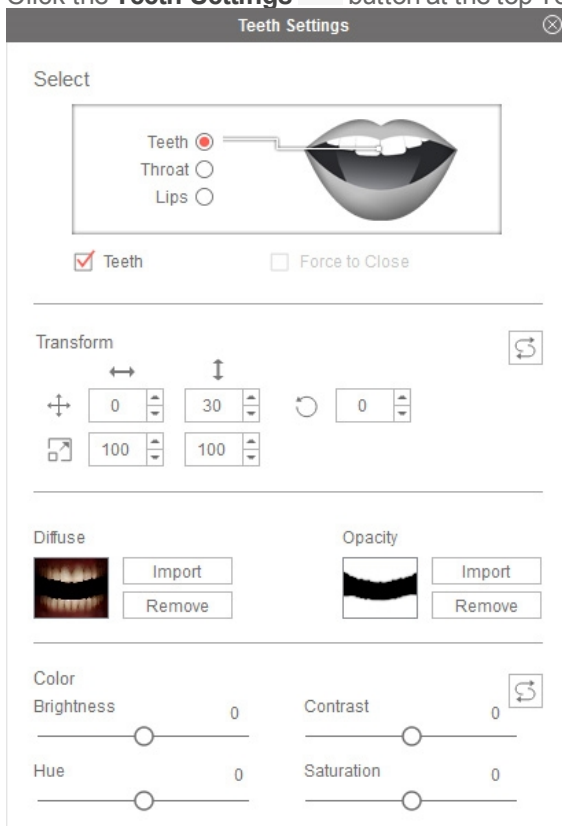
You may create your own character's teeth by importing a custom teeth image.

Creating Custom Teeth

1. First prepare a model and [apply a teeth template](#) from the teeth gallery.



2. Click the **Teeth Settings**  button at the top Tool Bar to access the **Teeth Settings** panel.



3. Choose the **Teeth** radio button.
4. In the **Diffuse** channel, click the **Import** button to load the texture image for the virtual teeth. (jpg, jpe, jpeg, bmp, tga, png are supported, 256x166 pixels recommended)



The teeth image, in **PNG** format, containing alpha channel.
(The part displayed in the check board pattern area)

Note:

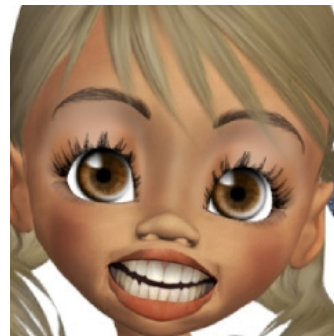
- If you import an image in 32-bit **BMP/TGA** or **PNG**, then the black part in the image will be converted into the alpha channel. If your image is not in 32-bit **BMP/TGA** or **PNG**, then you must load the grayscale image to decide the display area of the teeth.
- The part with alpha channel will be transparent and it will reveal the inside mouth color.



5. In the **Transform** section, fine tuning the the position and orientation of the teeth to match the angle of the mouth.
6. In the **Color** section, adjust the color of the teeth.

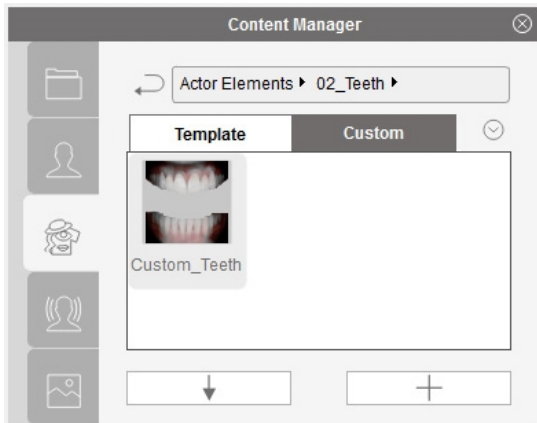


Before adjusting the teeth color



After adjusting the teeth color

7. Switch the **Content Manager** to **Actor Elements** >> **02_Teeth**, and add the custom teeth into the **Custom Library** for future use.

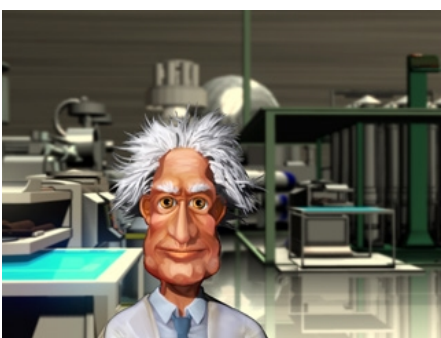


Editing the Background Mask

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.




Original actor image



Masked actor image

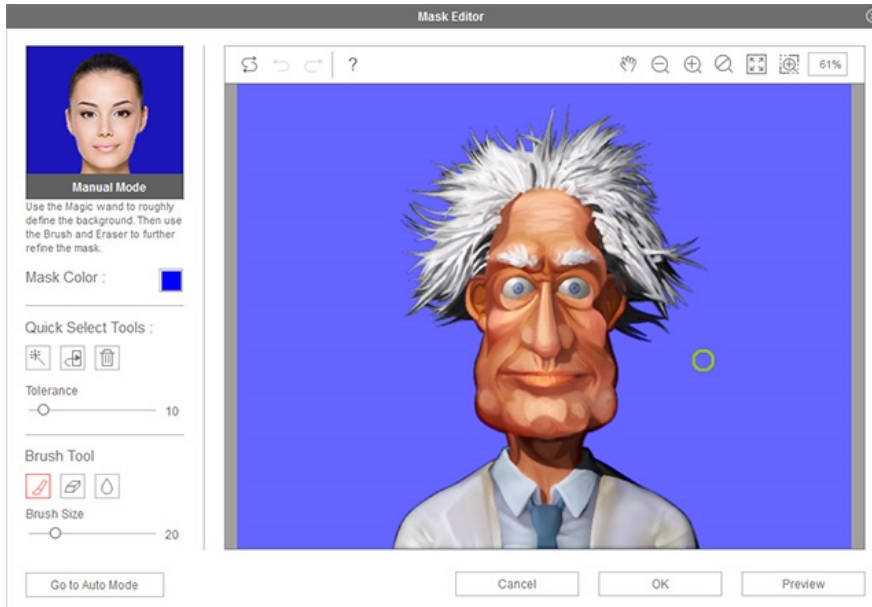
There are two methods to generate a background mask for your image.

Using Mask Editing Panel

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



- 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](#).

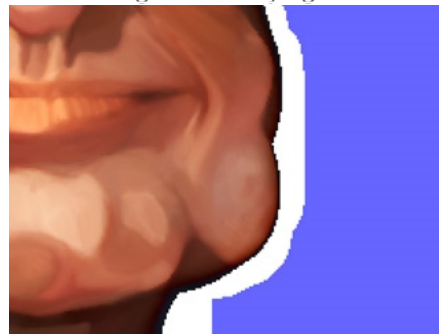
- Click the **OK** button and the colored area of the image will be filtered out.

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.



Before zoom in



Zoom in for more easily modifying the details

- **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.



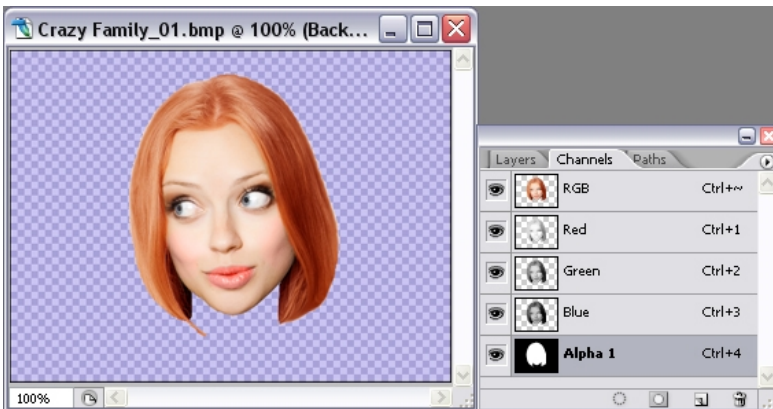
Drag a rectangle to surround the desired area



Zoom in for more easily modifying the details

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:

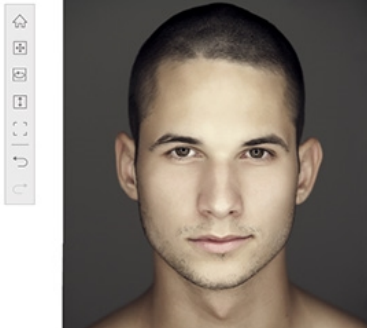
- The alpha channel information can be in 32-bit BMP, TGA or PNG format.
- If you wish to save the source image as PNG file, then remove the background layer, erase any unnecessary area of the image and save. You do not need to create an alpha channel layer in the **Channels** panel.



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.




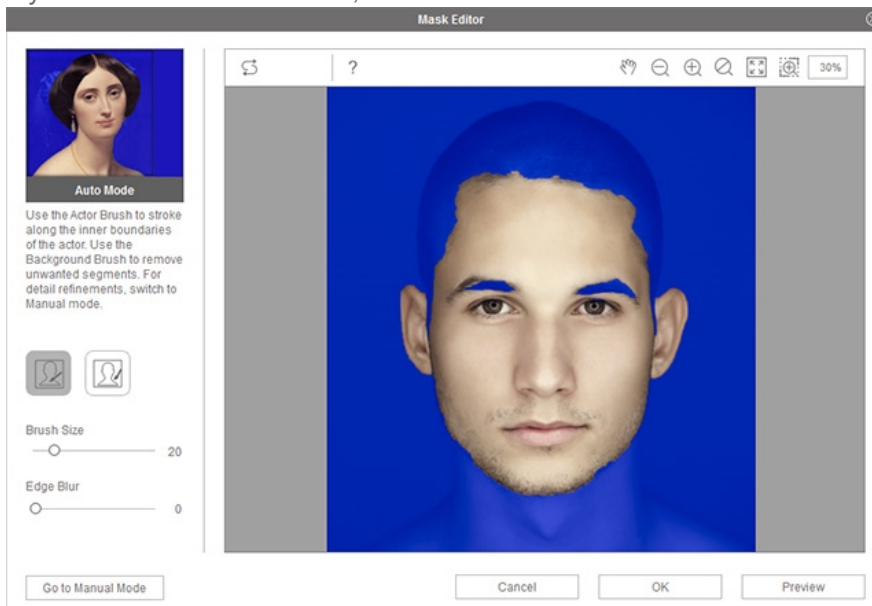
An actor without being masked.




The background of the original image conceals the custom background.

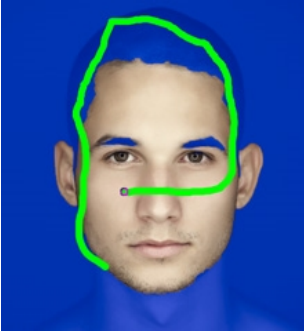
Using Auto Mode of Mask Editor

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**.

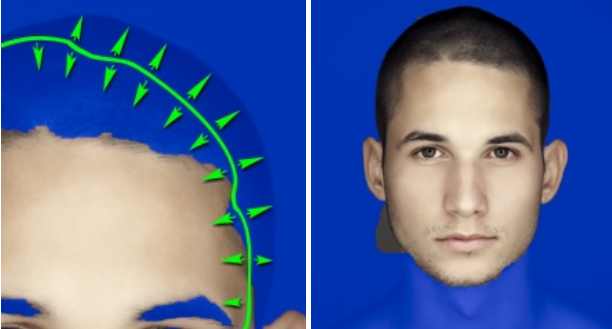


- The mask added in the **Manual Mode** will be abandoned after you switch to the **Auto Mode**.
- A new mask will be automatically append onto the image.
- Modify the mask with following steps.

3. Press down the **Actor Brush**  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 **Background Brush**  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 check-board 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:

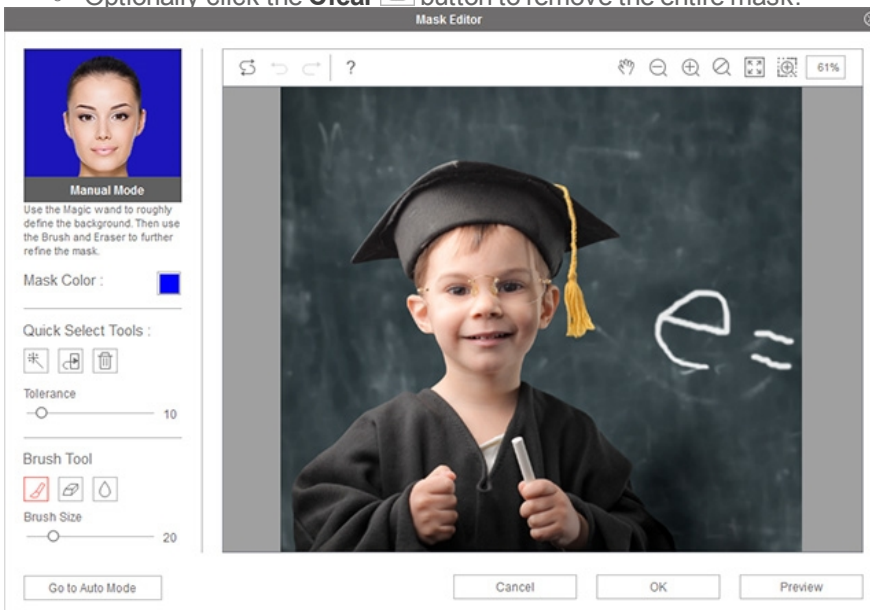
If you want to modify the details of the mask, then click the **Go to Manual Mode** button to enter the [Manual Mode](#) with current mask result.

Manual Mode for Masking

When your source image is complicated and the contour edges of the character can not 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 check-board grids indicate that the original background is masked.




7. You are able to using the **Brush Tools** afterward 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

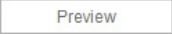
To modify the mask details, you can use the **Brush Tools**.

1. Press down the **Brush**  button in the **Brush Tools** section.
2. Draw strokes on the image to determine the masked area.



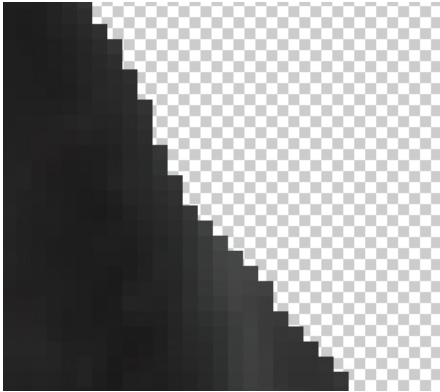
3. Press down the **Eraser**  button and paint on the image to correct the excessive areas of the mask.



4. Click the **Preview**  button to check out the mask result. The check-board 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.



Jaggy edges



Use blur tool to remove the jaggy edges

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


Note:

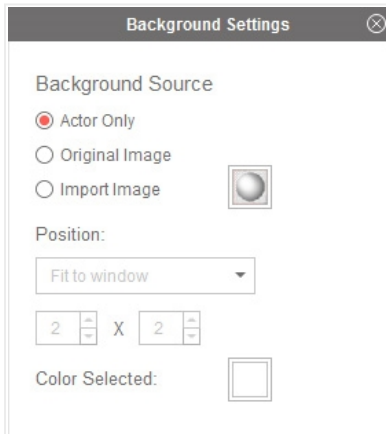
If you click the **Go to Auto Mode** **Manual Mode** will be discarded.

Go to Auto Mode

button to enter the [Auto Mode](#), the mask you have created in the

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 a 2D actor](#).



2. [Customize the mask.](#)



3. Choose the **Import Image** radio button in the **Background Settings** 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.



Custom actor is created



Background distorts as the actor moves

1. Load an image to [create a 2D actor](#).
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

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. Load an image to [create a 2D actor](#).



2. [Customize the mask](#). You may mask every parts of the image except the head of the character.



3. Choose the **Import Image** radio button in the **Background Settings** panel.
4. Load any other desired image.



5. Transform the actor to fit the background.




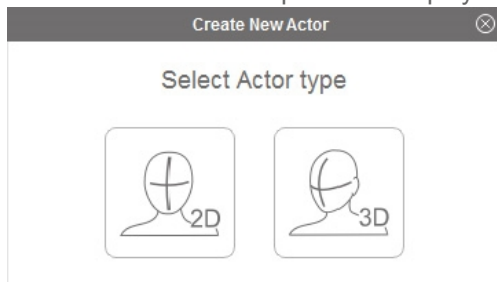
CHAPTER 4

Creating 3D Actor (New for Version 8)

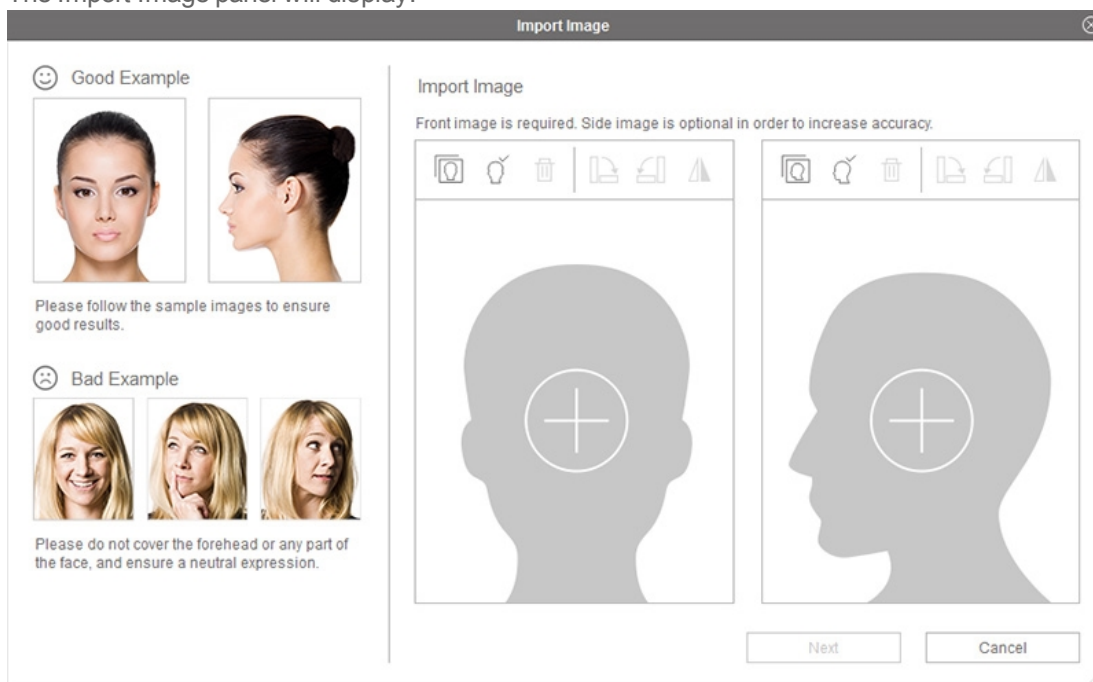
CrazyTalk allows you to create a 3D talking actor from front and side facial images. Because the actor is entirely 3D, the motions and the lip shapes become even more realistic than a 2D actor. By adding 3D hair, accessories and different outfits, the character can have special styles that fit its environment.

Creating 3D Actor

1. Click the **Create New Actor**  button on the toolbar.
2. The **Create New Actor** panel will display on the screen.



3. Click the 3D button to start the procedure of creating a 3D actor.
4. The Import Image panel will display.

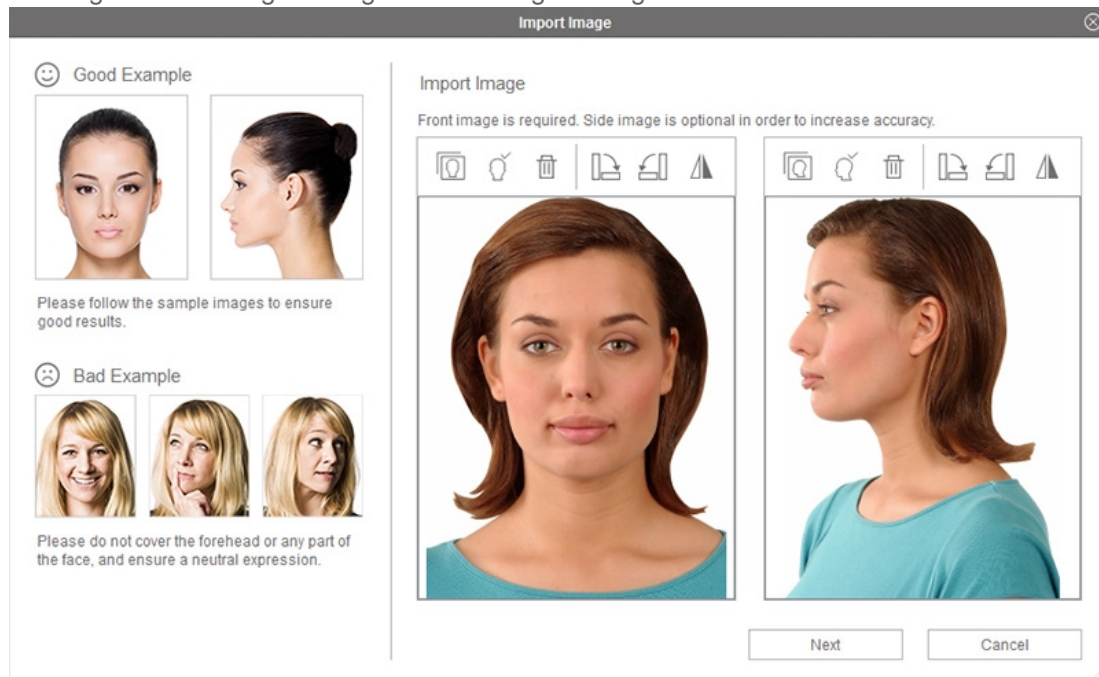


5. Obtain a facial image with either one of the methods below:

- Clicking the Front Image Editing button to load only the front face image.



- Clicking the Front Image Editing and Side Image Editing buttons to load the front and side face images.



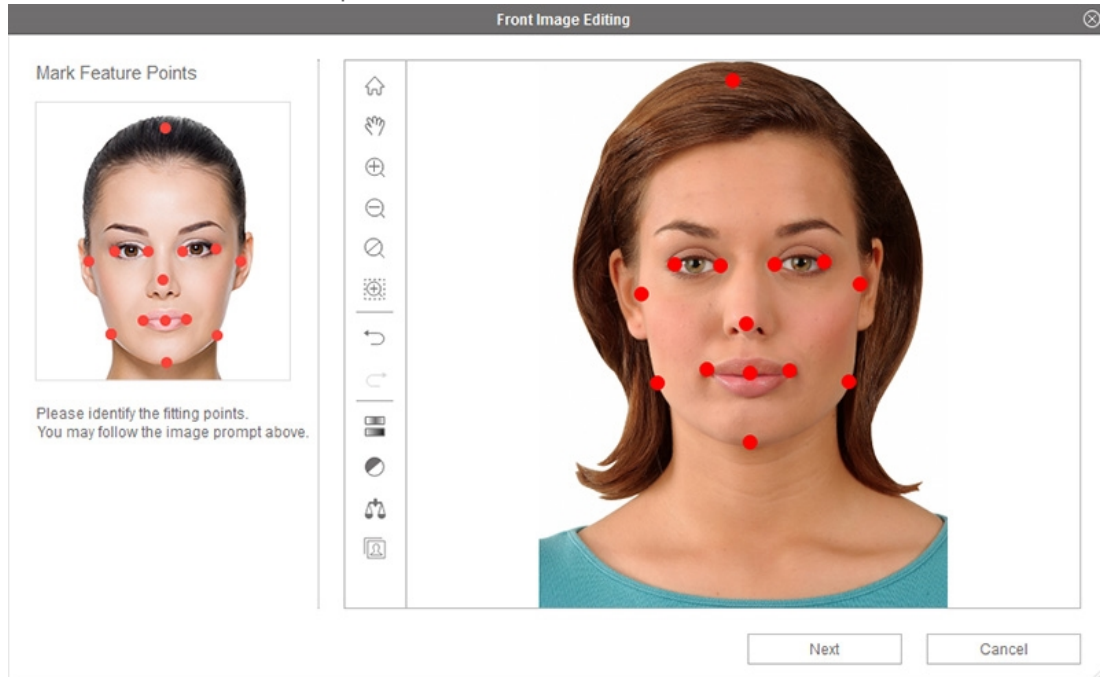
Note

- The supported image formats are: jpg, jpe, jpeg, png, bmp, tga and gif.
- The best frontal and profile portrait images are ones without a tilted head.
- Please refer to the [Import Image Panel Introduction](#) section for more information.

6. Click the **Next** button to start marking facial feature points.

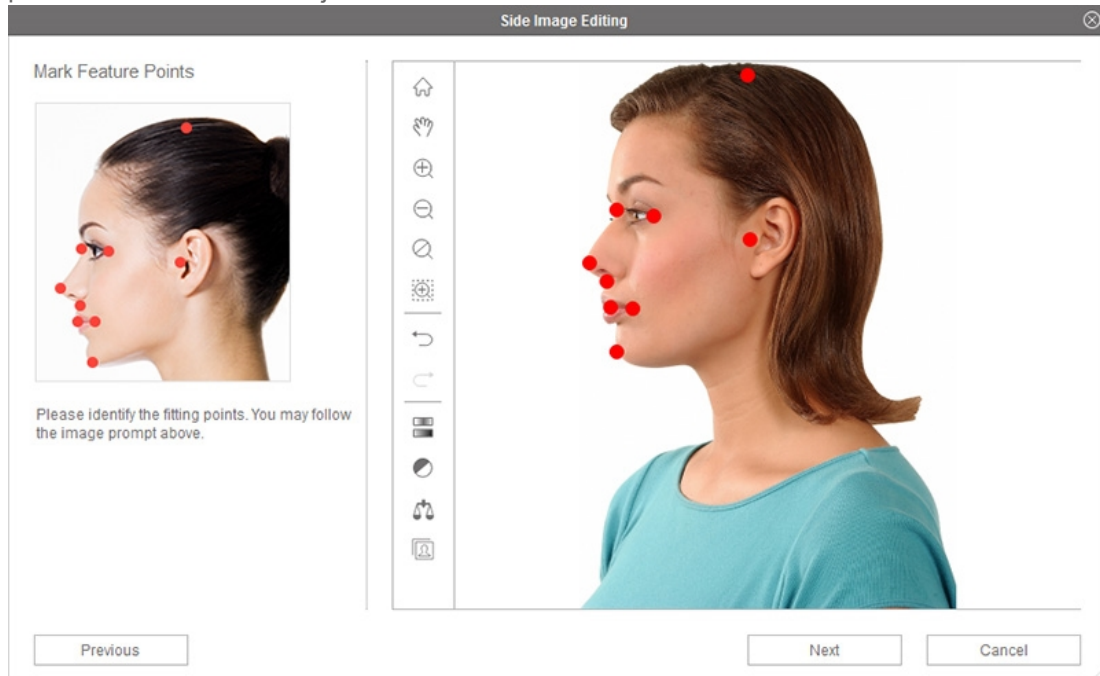
- **Marking the Front Face Features**

Follow the directions to fit 13 points to the facial features.

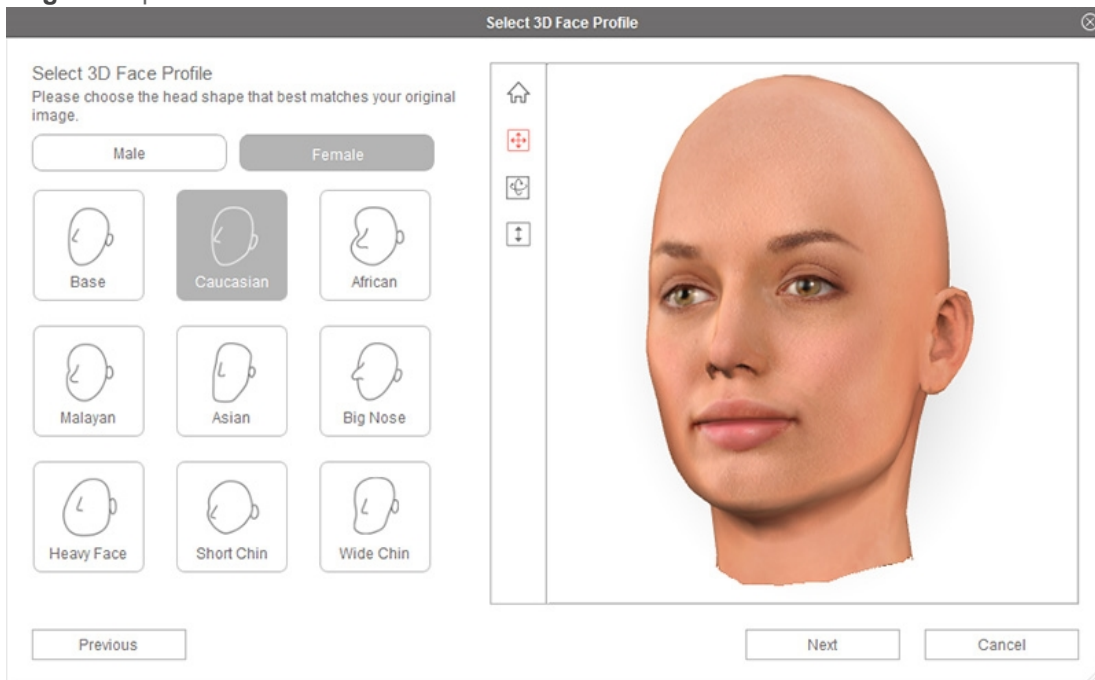


- **Marking the Side Face Features** (optional when a profile image is imported).

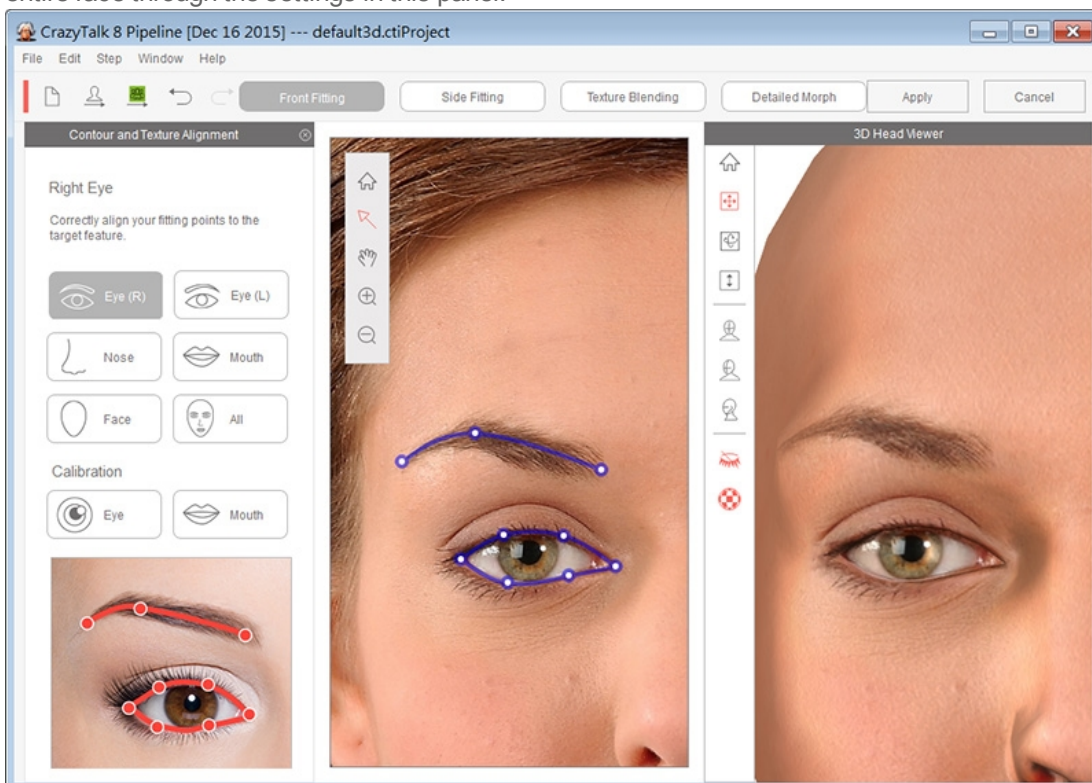
If you have imported a side face image, then in the next page, follow the directions to fit 7 points to form the profile line from forehead to jaw.



7. Pick a head shape that best fits the profile of your actor, then click the Next button to launch the **Contour and Texture Alignment** panel.

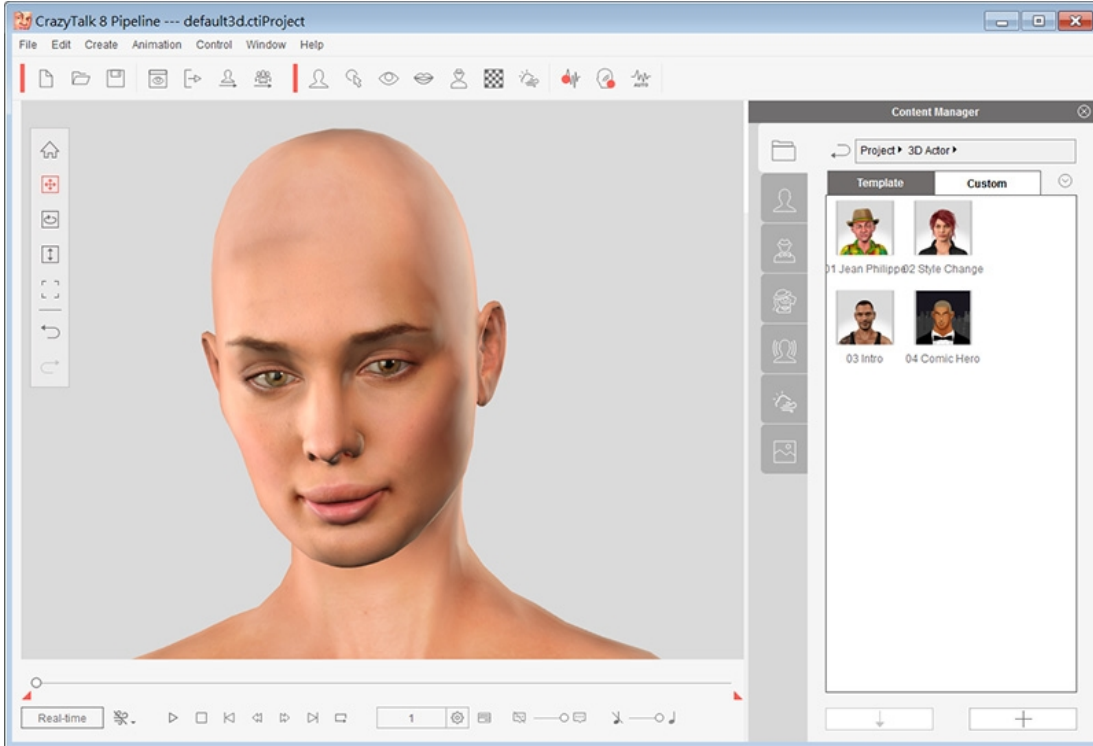


8. The **Contour and Texture Alignment** panel will show. You can fine-tune the feature points, the texture and morph the entire face through the settings in this panel.



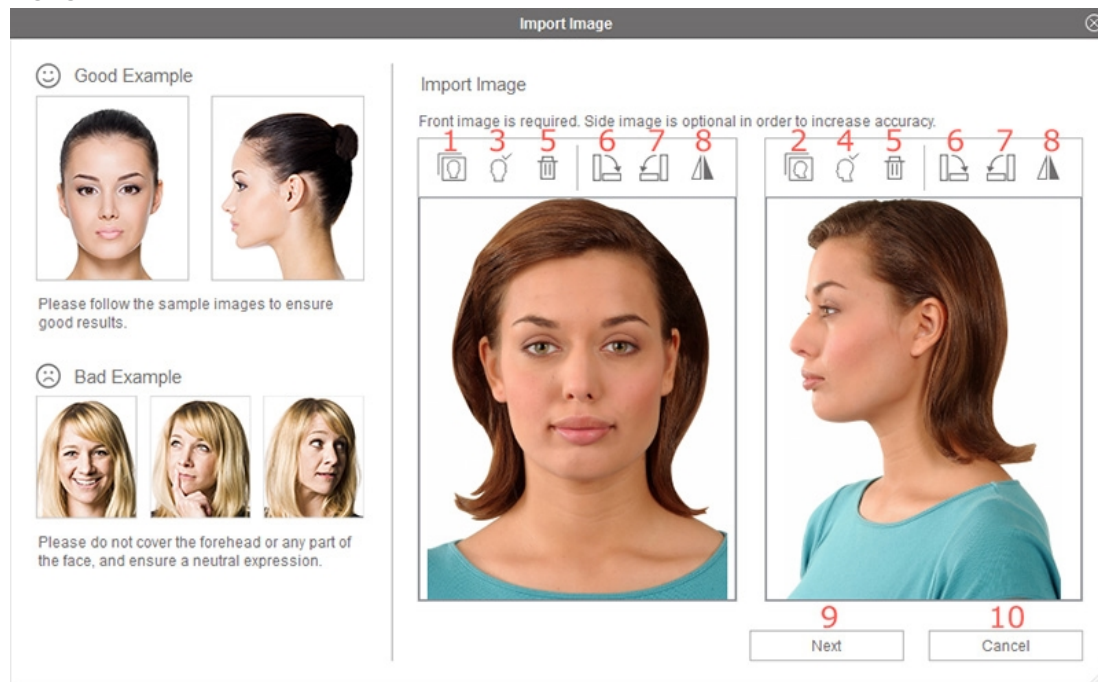
- i. [Front Face Fitting](#)
- ii. [Side Face Fitting](#)
- iii. [Using Textures Blending for Front and Side Photos](#)
- iv. [Fine-tuning with Detail Morph](#)

9. Click the **Apply** button and the 3D actor will be created and ready for animation.



Import Image Panel Introduction (New for Version 8)

After you click the 3D button in the panel, you will see the Import Image Panel for loading custom photos for the front and side views.



- 1 Import front image
- 2 Import side image
- 3 Import front sample image
- 4 Import side sample image
- 5 Delete
- 6 Rotate 90 CW
- 7 Rotate 90 CCW
- 8 Horizontal flip
- 9 Next
- 10 Cancel

To load an image with front face.

To load an image with side face. Please note that this image is optional.

To load a sample image with front face from embedded directory.

To load a sample image with side face from embedded directory. Please note that this image is optional.

To delete loaded front or side images.

To clockwise rotate the image by 90 degrees.

To counterclockwise rotate the image by 90 degrees.

To flip the image horizontally.

To go to the next step for [Marking Facial Features](#).

To exit this dialog box.

Note

- Double click on an empty image slot and you can browse your photo for loading.
- You are able to drag and drop an image onto the image slot for loading it if the slot is empty.

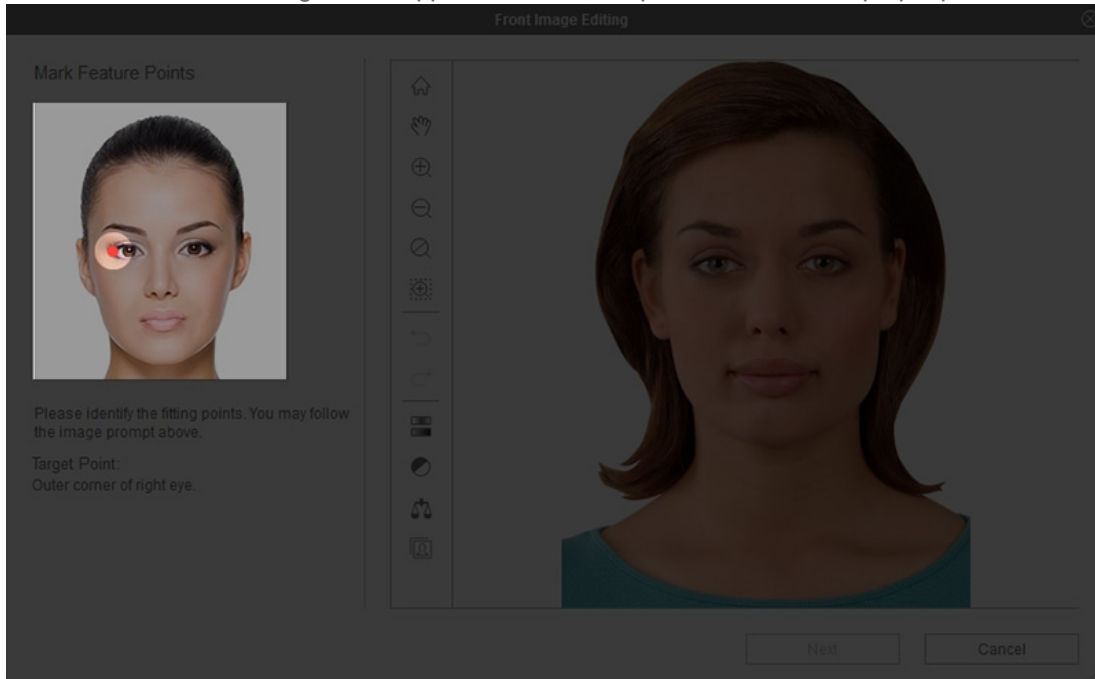
Marking Facial Features (New for Version 8)

Marking facial features page allows you to determine the position of the front and side facial features by adjusting feature points.

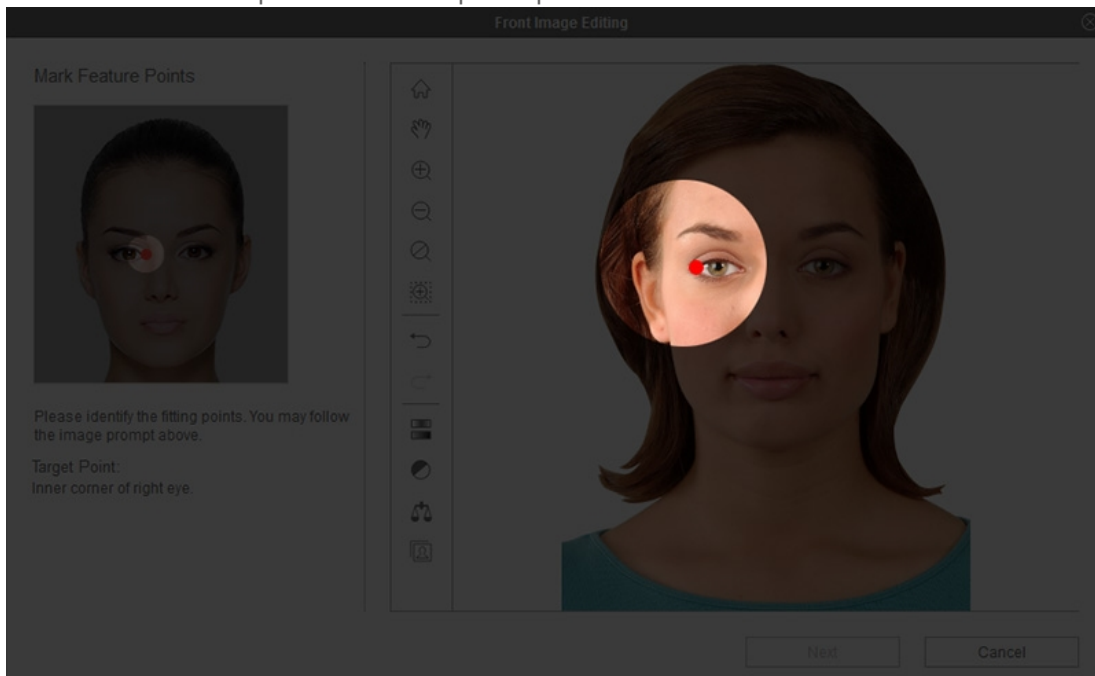
Marking Front Facial Features

By setting the feature points to the correct positions on the face, you are able to roughly determine the position of the facial features. Please follow the steps below:

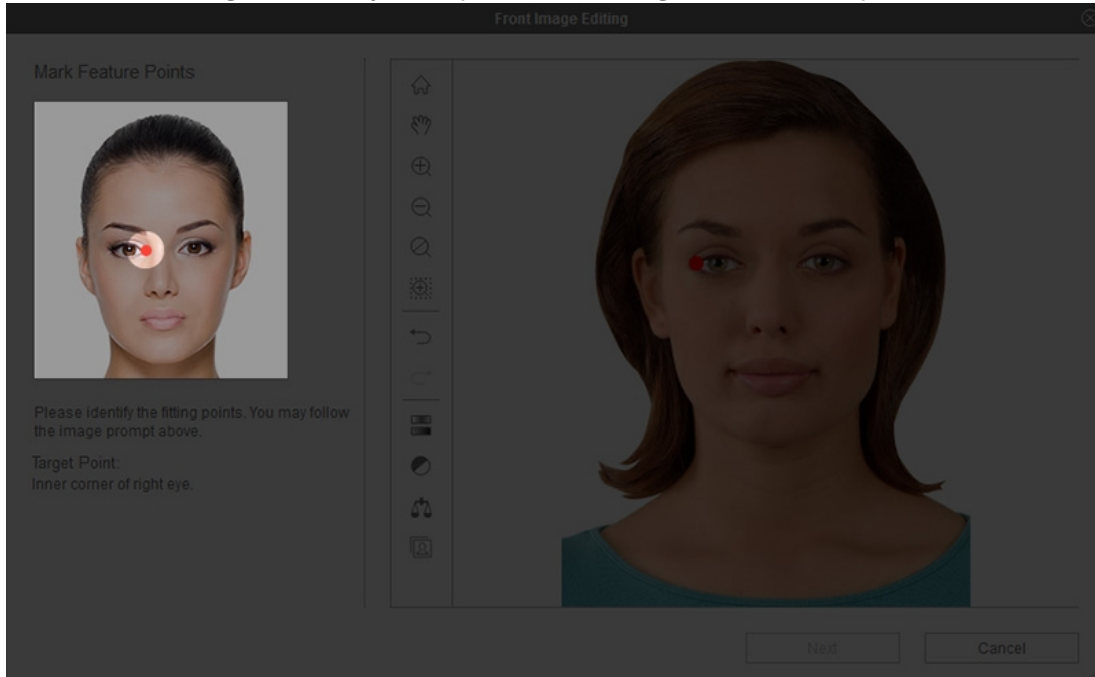
1. Notice the instruction image at the upper-left side of the panel. It shows the proper position for the current feature point.



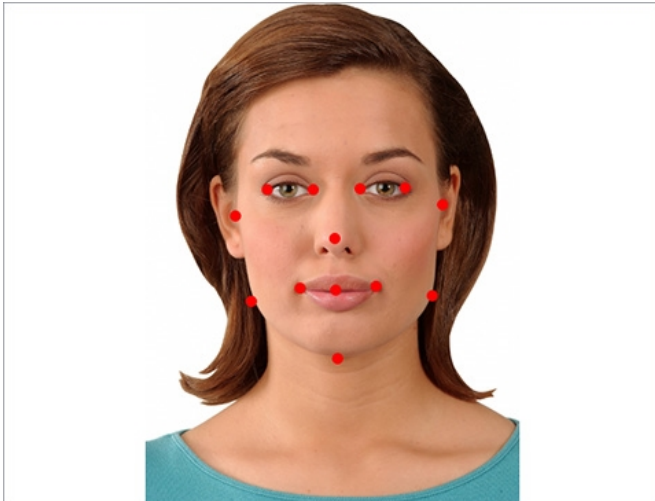
2. Click on the indicated position on the imported photo.



3. The instruction image will show you the position for setting the next feature points.



4. Follow the instructions to finish setting all the feature points.



5. Click the **Next** button when finished.

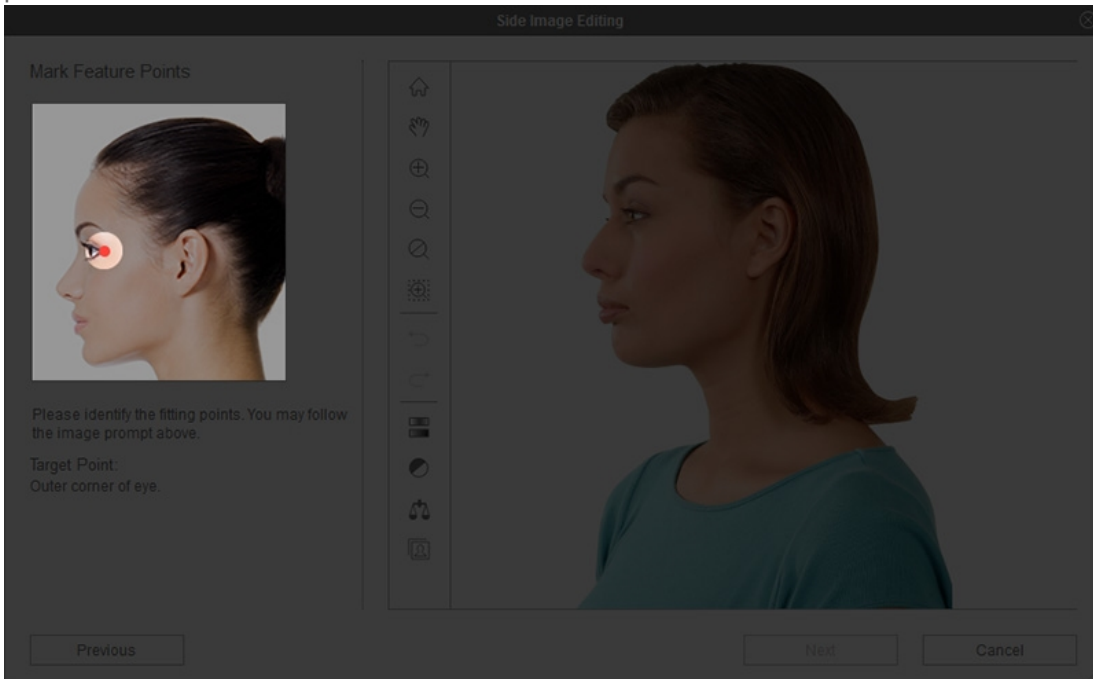
Note

- If you have imported a side image, then the next procedure will be setting the feature points for the side face as described in the next section.
- If you did not import a side image, then the next procedure will be choosing the base head for the actor.

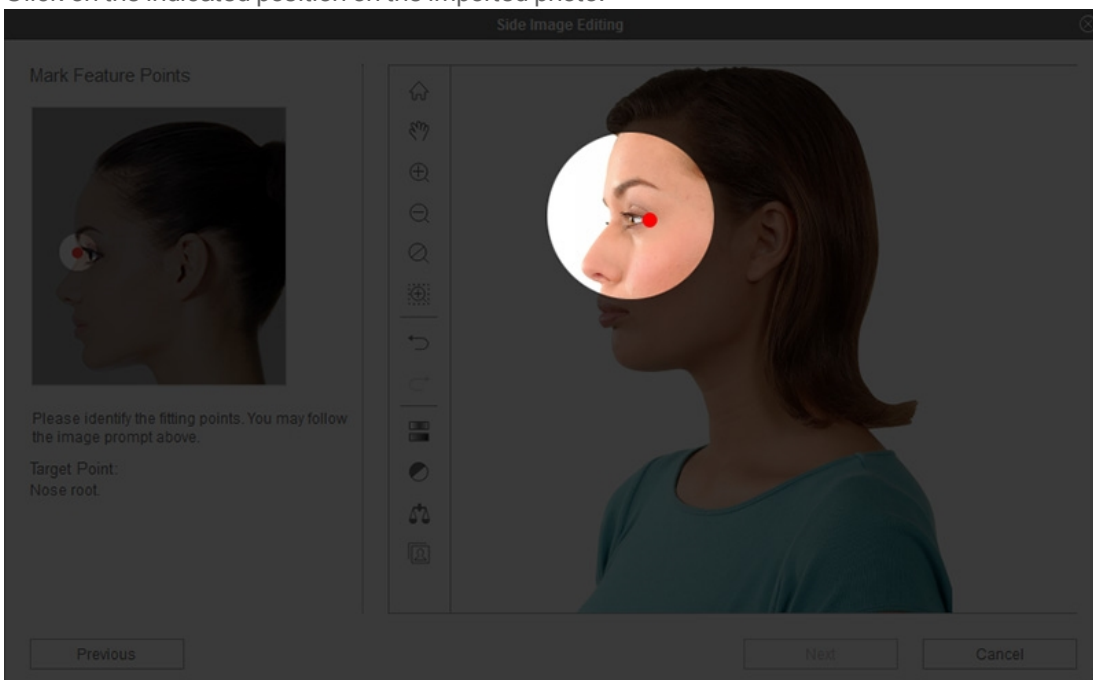
Marking Side Facial Features

If you have imported an image of side face in the previous procedure, then you need to mark the facial features to depict the profile of the actor; otherwise, you can skip this section.

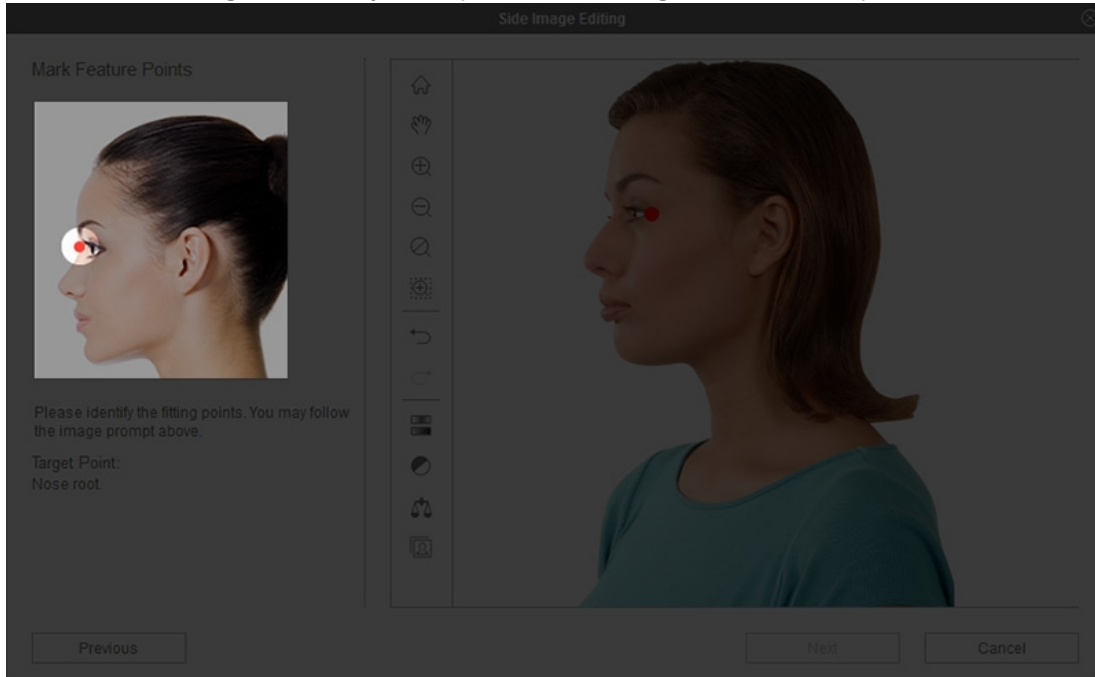
1. Notice the instruction image at the upper-left side of the panel. It shows the proper position for setting the current feature point.



2. Click on the indicated position on the imported photo.



3. The instruction image will show you the position for setting the next feature points.



4. Follow the instructions to finish setting all the feature points.

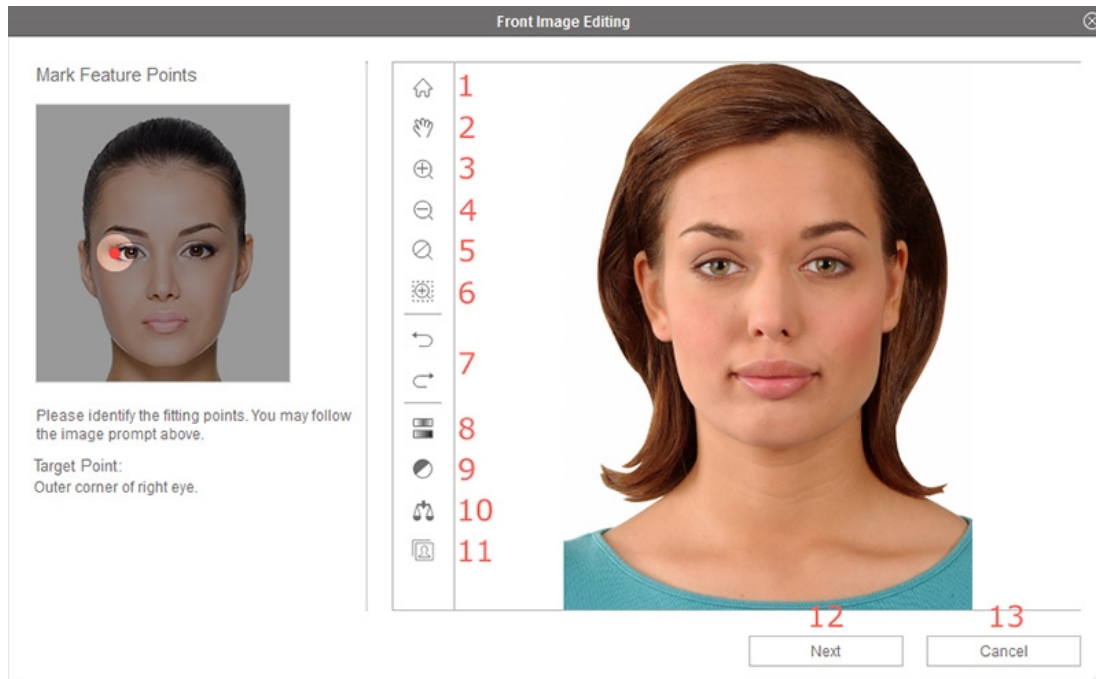


5. Click the **Next** button to go for the next procedure, [Selecting 3D Face Profile](#).

Note

Please refer to the [Introduction of Marking Facial Features Page](#) section for more information about the tools on the top of this page.

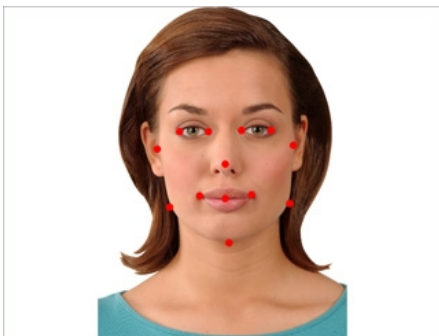
Introduction of Marking Facial Features Page (New for Version 8)



1. **Zoom Fit**
Click this button so that the image will be zoom in or zoom out in order to just fit into the preview window.

2. **Pan**
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.

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



Before zoom in



Zoom in for more easily modifying the details

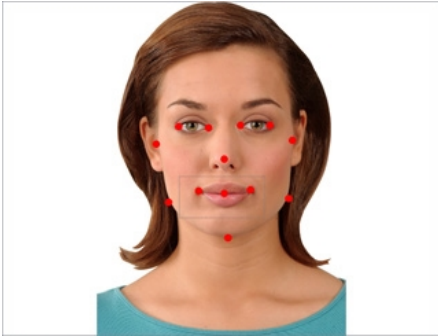
4. **Zoom Out**
Click this button to zoom out the image for observing more of the image.

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

6.

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 with **Magnify** tool for more easily modifying a specific area

7.

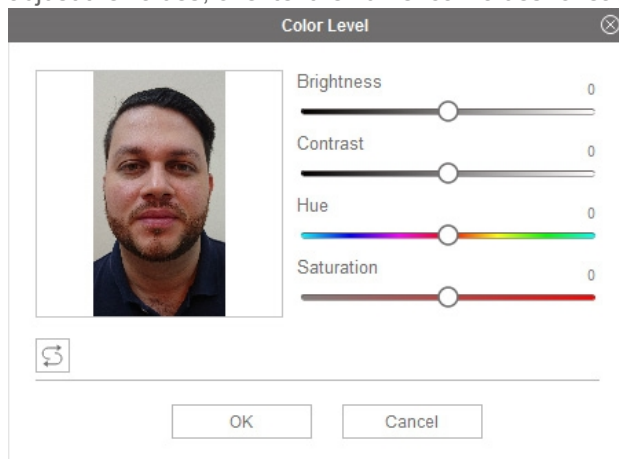
Undo / Redo

Click these two buttons to undo or redo the last action.

8.

Color Level

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.



9.

Smart Level

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

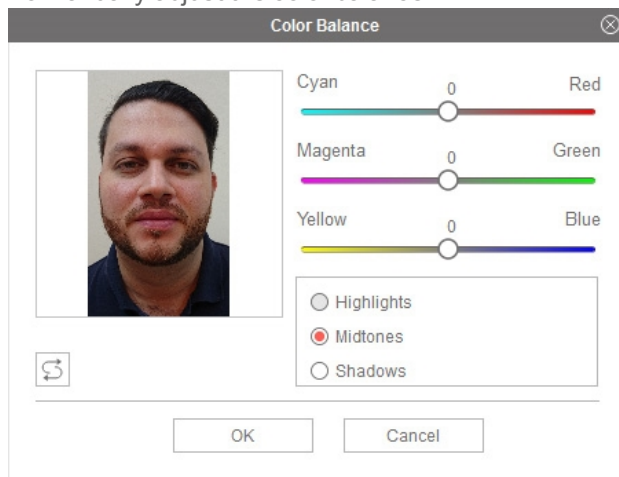


After

10.

Color Balance

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.

11.

Import Image

If you want to import a new image, click this button for browsing your new photo.

12.

Next

Click this button to move on to the next procedure for [Selecting 3D Face Profile](#) for the actor. However, if you have loaded a side image, then you will be led to a page for marking the fitting points on side photo.

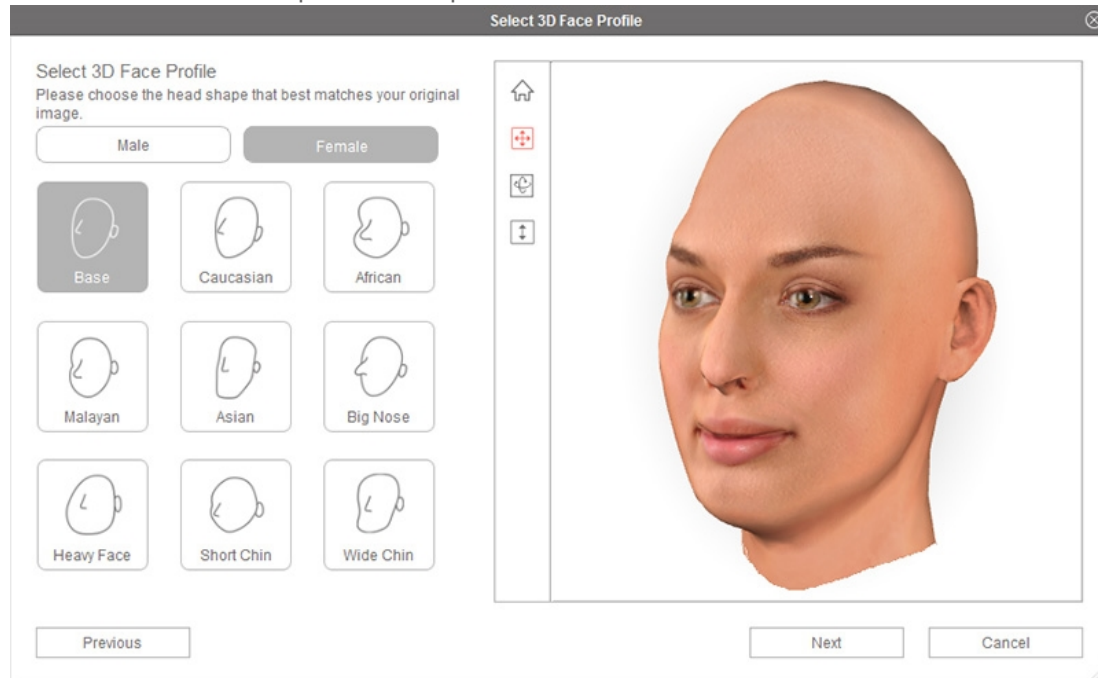
13.

Cancel

Abort the current procedure.

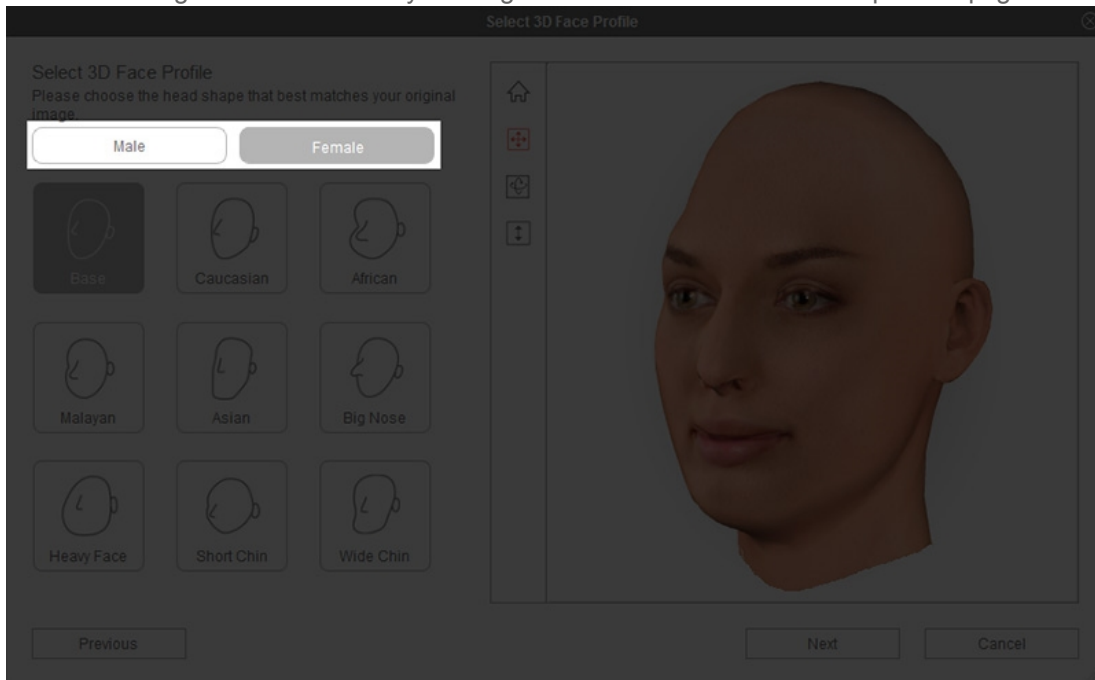
Selecting 3D Face Profile (New for Version 8)

After setting the facial features in the [Marking Facial Features](#) page, you need to adjust the basic head shape in accordance with the characteristics of the person in the photo.



Start from Neutral 3D Profile or a Specific Profile

1. Determine the gender of the actor by clicking one of the buttons on the left-top of this page.



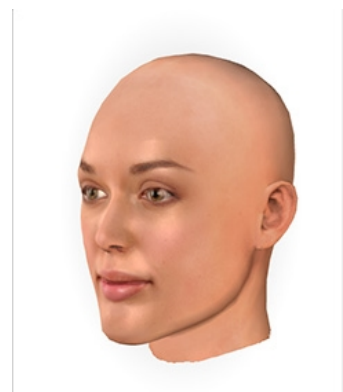
2. Pick one of the templates from the library that best matches the character's head characteristics.



Base



Female Standard



Heavy Chin



African



Hawk Nose



Fat Face

Note

You can use the rotate tool to rotate the head for check the result.

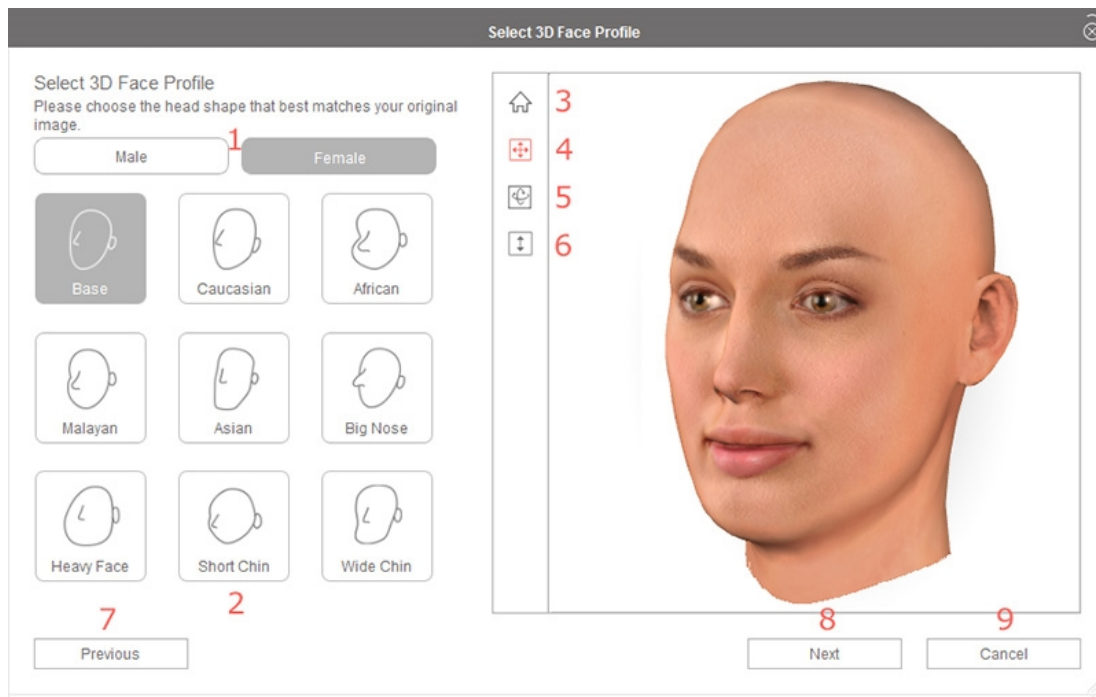


- Click the **Next** button at the bottom of the page for detail fitting the facial features if you find the ideal head template that is suitable for the actor.

Note

Please refer to the [Introduction of Selecting 3D Face Profile Page](#) section for more information about the user interface of this page.

Introduction of Selecting 3D Face Profile Page (New for Version 8)



1.

Gender Switch

Click these buttons to switch between the gender libraries.

2.

Head Base Template Library

Click to select one of the head base templates for the 3D actor.

3.

Home

Click this button at any time to reset the preview camera to the default angle.

4.

Pan

Press down this button and drag the camera in order to focus on the desired area for previewing.

5.

Rotate

Press down this button to rotate the preview camera in order to check out the head from different perspectives.



6.

Zoom

Press down this button and vertically drag within the preview window to zoom in or zoom out the camera.

7.

Previous

Click this button to go back to the previous step, [Marking Facial Features](#).

8.

Next

Click this button when you are satisfied with the selected head base, and move to the next step, [Front Face Fitting](#).

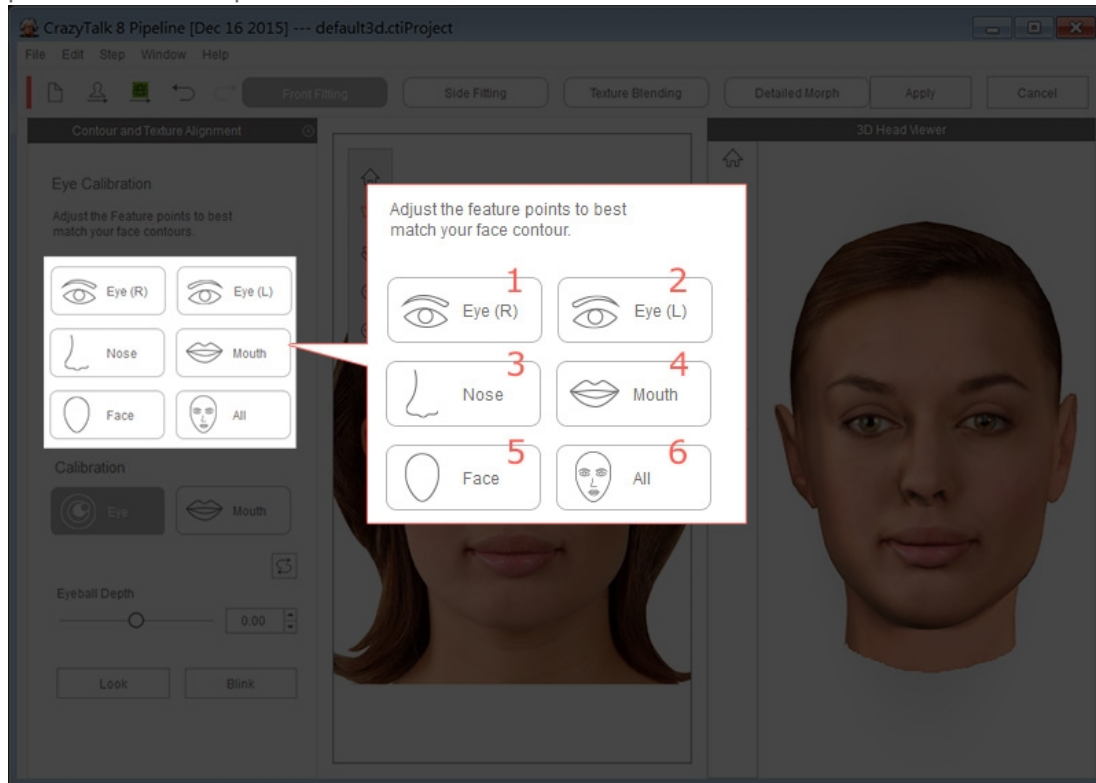
9.

Cancel

Click this button to abort the current procedure and move back to the main program.

Front Face Fitting (New for Version 8)

CrazyTalk provides a precise fitting solution to match the facial features from your image, which serves as the crucial starting point of any facial animation processes. In the **Front Fitting** step, you will need to fit the following facial features accurately as possible in each step.



Step 1: RightEye - [Fitting the Eyes and Eyebrows](#)

Step 2: LeftEye - [Fitting the Eyes and Eyebrows](#)

Step 3: Nose - [Fitting Nose](#)

Step 4: Mouth - [Fitting Mouth](#)

Step 5: Face - [Fitting Head](#)

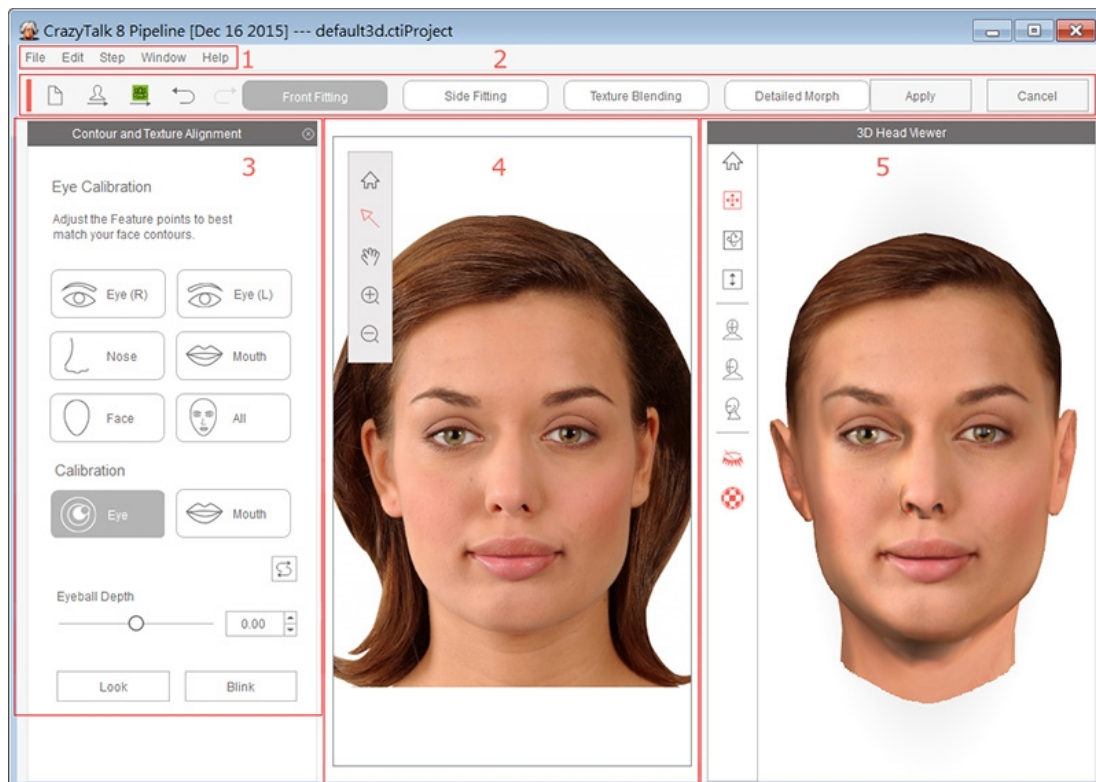
Step 6: All - Previewing the Fitting Result

Step 7: Calibration - [Calibrating Eyeballs, Teeth and Tongue](#)

Note

Please refer to the [Introduction of Front Face Fitting Page](#) section for more information about the user interface of this page.

Introduction of Front Face Fitting Page (New for Version 8)

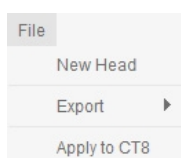


1.

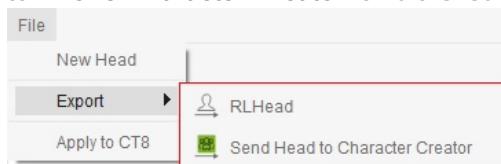
Main Menu

The main menu contains several frequently used menus:

- File**

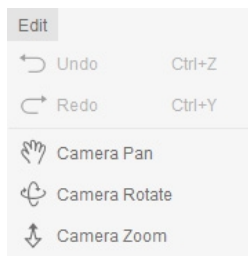


- New Head - To abort the current works and create a new 3D actor from scratch.
- Export - Export the head of the current 3D actor as a **RLHead** file (in ***.rlHead** format) or send the head to **iClone Character Creator** for further editing.



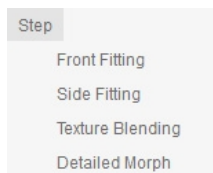
- Apply to CrazyTalk- Apply the currently being created head to the main program.

- **Edit**



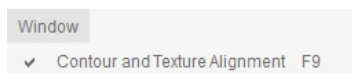
- Undo - To undo the last action.
- Redo - To redo the last action that has been undone.
- Camera Pan - To move the preview camera of the 3D view port.
- Camera Rotate - To rotate the preview camera around the 3D actor in order to check it from different perspective.
- Camera Zoom - To zoom in or zoom out the preview camera for viewing the 3D actor closer or farther.

- **Step**



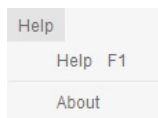
- Front Fitting - To fit the detail feature points to the front facial features.
- Side Fitting - To fit the detail feature points to the profile line of the photo with side face.
- Texture Blending - To determine the level of the blending areas formed by the front and side images.
- Detailed Morph - To adjust the facial feature more detail with morphing technology.

- **Window**



- Contour and Texture Alignment - To show or hide the **Contour and Texture Alignment** panel for modifying the current 3D actor.

• Help



- Help - To open the **CrazyTalk** online manual with browser.
- About - To show the basic information about **CrazyTalk**.



2.

Toolbar

The toolbar contain tools for creating new head, undo or redo actions, fitting steps and apply the current 3D actor back to the stage.

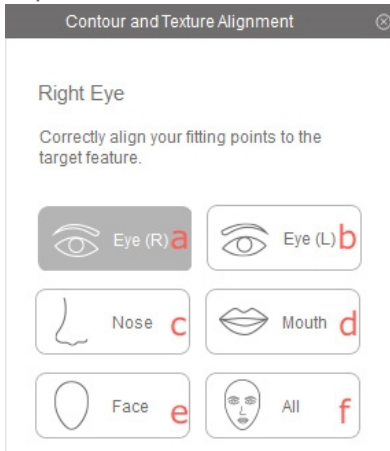


- New Head - To abort the current works and create a new 3D actor from scratch.
- Export RL Head- Export the head of the current 3D actor in *.rlhead format.
- Send Head to Character Creator - Send the currently being created head to **iClone Character Creator**.
- Undo and Redo - To undo the last action or redo the action that has been undone.
- Front Fitting - To fit the detail feature points to the front facial features.
- Side Fitting - To fit the detail feature points to the profile line of the photo with side face.
- Texture Blending - To determine the level of the blending areas formed by the front and side images.
- Detail Morph - To adjust the facial feature more detail with morphing technology.
- Apply to CrazyTalk - To leave the 3D-actor-creating procedure and apply the currently created actor to the stage.
- Cancel - To abort current work and return back to stage.

3.

Contour and Texture Alignment

In the Contour and Texture Alignment panel, you are lead to set the detail feature points to the facial features in the photo by different sub-steps, such as **RightEye**, **LeftEye**, **Nose**, **Mouth**, **Face**, **All** (for previewing), and even basically re-position the transformation of the eyeballs, teeth and tongue.



- RightEye**- This sub-step shows the wireframes and points of the right eye and eyebrows. You can determine the position of the eyebrow bones and the range for revealing the eyeball.
- LeftEye**- This sub-step shows the wireframes and points of the left eye and eyebrows. You can follow the same method as you do to the right eye and eyebrows in this sub-step.
- Nose** - In this sub-step, you can determine the shape of the nose of the 3D actor in order to match the nose look of the face in the photo. Because the nose is the most extrusive feature on the face, the similarity stands a crucial position for creating a same 3D actor as the one in the photo.
- Mouth** - Because the actor will talk afterward, it is important to define the shape of the mouth, especially the cut open line between the lips. You can set these feature points to depict the mouth and the open in this sub-step.
- Face** - The face determine the skull of the 3D actor. Fitting the feature points to the head in the photo increases the persuasion that the 3D actor is the same one as in the photo.
- All** - In this sub-step, you can preview the entire fitting result in the previous sub-steps and do some further adjustments.

4.

Original Photo View

In the **Original Photo View**, the imported photo are displayed. You can zoom in, zoom out or move the photo in order to easily comparing the looks between the photo and the 3D actor.

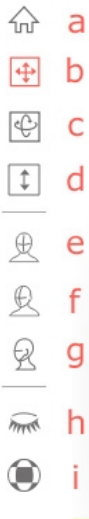


- Home** - Click this button to fit the entire photo to the view window.
- Edit Mode** - Press down this button to select the wireframe or the feature points before move them.
- Pan Tool** - To move the camera of the view port as you zoom in to check out the photo.
- Zoom In** - To zoom in the camera for viewing the photo closer. You can also roll up the mouse wheel to zoom in.
- Zoom Out** - To zoom out the camera for viewing more of the photo. You can also roll down the mouse wheel to zoom out.

5.

3D Head View

This view displays the facial fitting results of the 3D actor. You are allowed to observe the 3D head from different perspectives. Furthermore, by turn on or off the eyelashes, you can inspect the eyes more clearly.



- a. Home - Click this button to fit the entire 3D head to the 3D head view window.
- b. Camera Pan - To move the camera of the view port as you zoom in to check out the 3D head.
- c. Camera Rotate - To rotate the camera around the 3D head for viewing the 3D head from different angles.
- d. Camera Zoom - To zoom in or out the camera for viewing the 3D head in near or far distance. You can also roll the mouse wheel to zoom in our zoom out.
- e. Front View - To snap the camera to the front view of the 3D head.
- f. 45 Degrees - To snap the camera to the 45 degree view of the 3D head.
- g. Side View - To snap the camera to the side view of the 3D head.
- h. Eyelashes On / Off - To show or hide the 3D eyelashes for observation the eyes.



Eyelash Off



Eyelash On

- i. Preview Resolution - To switch the displaying mode for the mapped face texture in 1024 or 2048 resolution.



1024



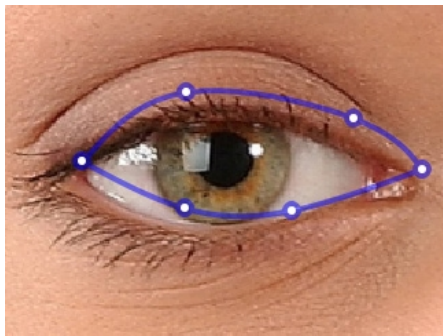
2048

Fitting the Eyes and Eyebrows (New for Version 8)

Outlining the base shapes of eyes and eyebrows is important for applying any facial expressions in **CrazyTalk**. Go to the **RightEye** or **LeftEye** sections and adjust the fitting points and lines to match the facial features. Before proceeding, you may want to learn the basic skills for adjusting the wireframe.

Fine-tuning the Eye Position

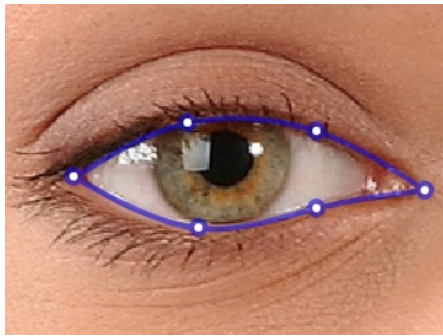
The wireframe for the eye shape affects eye expressions. To achieve an ideal expression results, adjust the fitting points and lines to wrap along the eyelids.



The initial positions detected by **CrazyTalk**.
Move the points or the entire line to best fit the rims of the eye.



The fitting result is not adequate.



The wireframe and feature points are adjusted.



The above fitting result is ideal.

Setting the Eyebrows

It is crucial to define the shape of the eyebrow for ideal eyebrow animations.

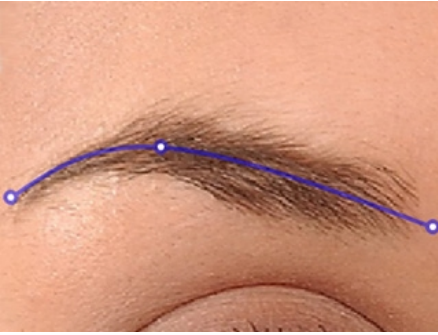


The initial positions detected by **CrazyTalk**.



The above fitting result is not adequate.

Move the points or the entire line to better fit the trajectory of the brow.



The wireframe and feature points are adjusted.



The above fitting result is ideal.

Note

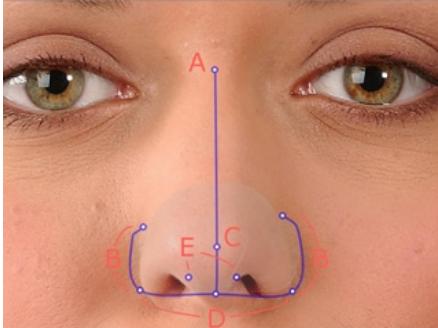
Once eyebrow and eye definitions have been established, you can always go back and adjust them at any point in your facial feature fitting process.

Fitting Nose (New for Version 8)

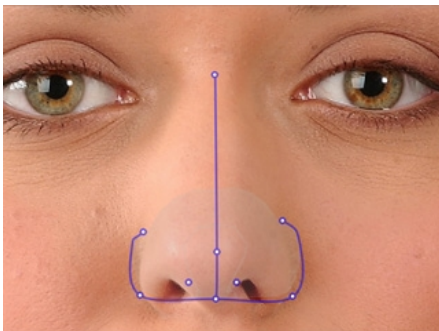
Outlining the base shape of the nose is important because nose is the most prominent feature on the face. A good fitting of the nose can be almost 70-percent successful for creating a 3D head from a 2D human photo.

Fine-tuning Nose Position

Click on the point to transform the outline of the nose, or click on the line segment to drag the wireframe closer to the feature based on the illustration below:



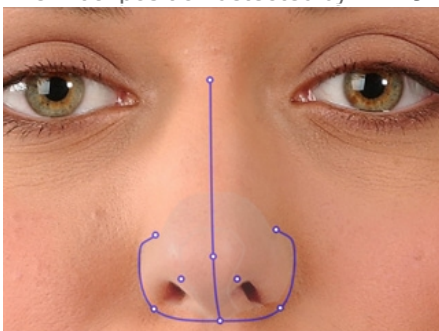
- A. Nose Root - Fit this point to the nose root of the face in the photo.
- B. Nose Alea (plural of ala) - Move the four corner points to frame up the alea.
- C. Nose Tip - Fit this point to the tip of the nose.
- D. Nose Base - Move the point to the middle of the nose base.
- E. Nostril Back Points - These two points should be moved to the back edges of the nostrils.
- F. Nostril Front Points - These two points should be moved to the front edges of the nostrils.
- G. Nostril Inner Points - These two points should be moved to the inner edges of the nostrils.



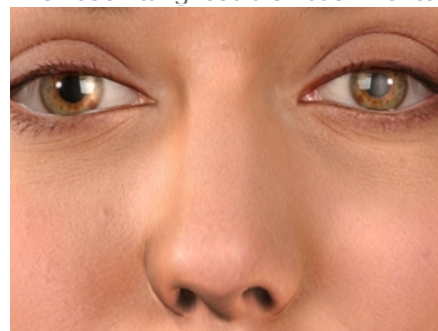
The initial position detected by **CrazyTalk**.



The nose-fitting result is not similar to the one in the photo.



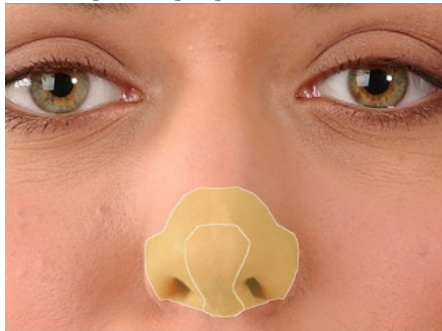
Manually adjust the points in accordance with the instructions of the illustration above.



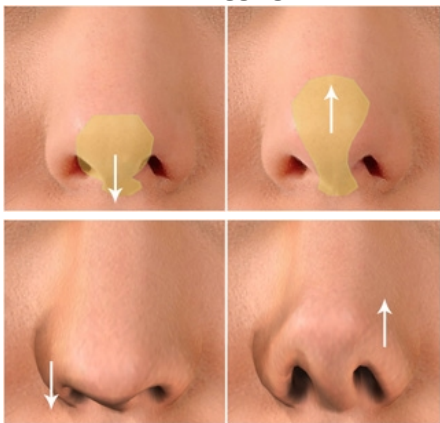
The nose of the 3D head looks more similar to the one in the photo.

Morphing Nose

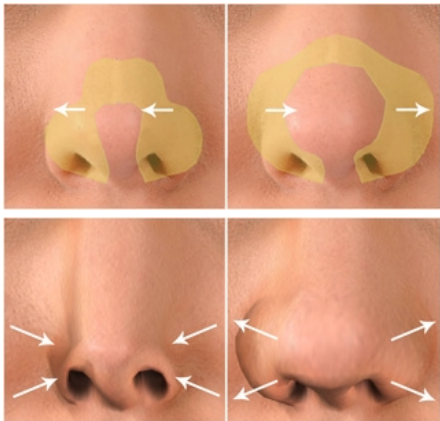
After deforming the nose shape by fitting the feature points, if you need to fine-tune the size of the nose tips and ales, then you can drag the highlighted area as shown below to adjust them.



- The inner area - Dragging within this area vertically can adjust the nose tip up or down.



- The outer area - Dragging within this area horizontally can adjust the size of the nose tip and alea.



Note

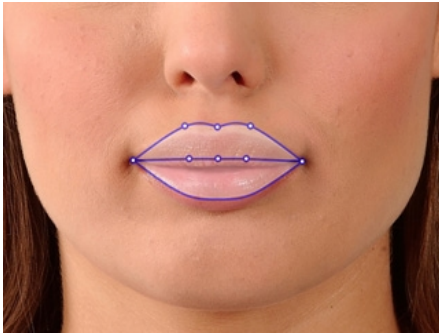
The dragging in the morph areas maps to the facial feature sliders in the **Detail Morph** step. Please refer to the [Fine-tuning with Detail Morph](#) section for more information.

Fitting Mouth (New for Version 8)

Outlining the base shapes of the mouth is important for having the 3D actor talk with realistic lip shapes; therefore, set the feature points and lines as close as possible to the shape of mouth in the photo.

Fine-tuning Upper Lip Position

Click on the point to transform the outline of the mouth , or click on the line segment to drag the wireframe closer. The wire-frame is designed for a closed mouth by default.



The initial upper lip position detected by **CrazyTalk**.



Manually adjust the points to match the upper lip in the photo.



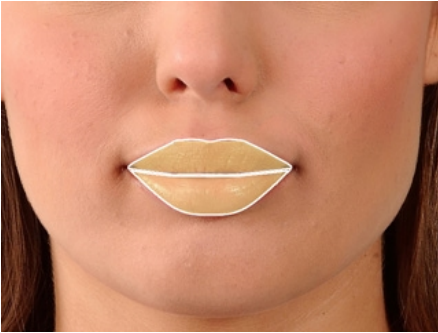
The fitting result is not correct, especially the mid line of the mouth.



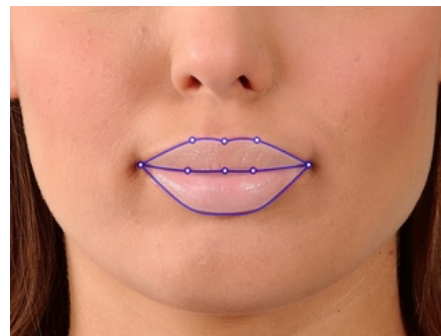
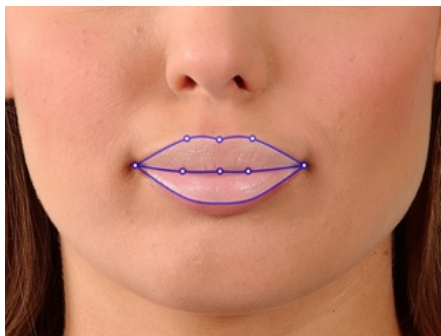
The upper lip of the 3D head looks more similar to the one in the photo.

Morphing Lips

After deforming the upper lip shape by fitting the feature points, if you need to fine-tune the size of the lips, then you can drag the highlighted area as shown below to adjust them.



- The morphing area - Dragging within these areas vertically can also fit the wire to correct positions of the lips, especially the lower lip.



The original wire line framing above the lower lip is not complete. Use the morphing area to completely cover the wire line to adequate position of the lower lip.

Note

If you want to morph the lips for adjusting the thickness of them, then please refer to the [Fitting Mouth Depths](#) section for more information.

Note

The dragging in the morph areas maps to the facial feature sliders in the Detail Morph step. Please refer to the [Fine-tuning with Detail Morph](#) section for more information.

Fitting Head (New for Version 8)

Outlining the base shapes of the head contour is important for applying shape templates in **CrazyTalk**. In the **Face** sub-step, set the feature points and lines as close as possible to the natural shape of the head.

Fine-tuning the Head

Click on any point to transform the outline of the head contour, or click on the line segments to drag the entire wireframe into position.



The initial position detected by **CrazyTalk**



The head shape of the 3D actor is similar but not very alike the one in the photo.



Manually adjust the points to match the head in the photo.



The head of the 3D head looks almost the same as the one in the photo.

Morphing Forehead, Ears, Cheeks and Chin

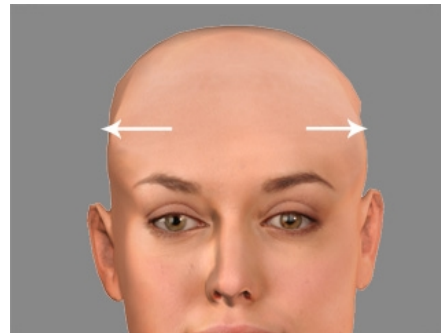
After deforming the head shape by fitting the feature points, if you need to fine-tune the angle of the ears, the thickness of the cheeks and chin, then you can drag the highlighted areas as shown below to adjust them.



Forehead Area



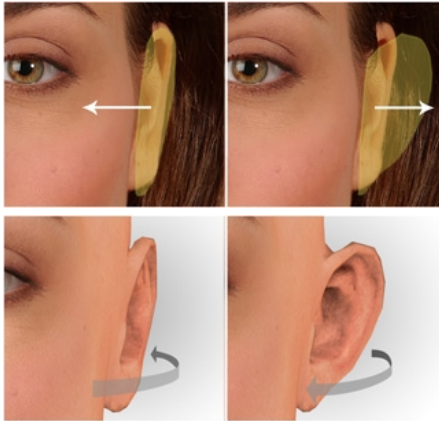
- Horizontally Dragging - To determine the width of the forehead.



Ear Areas



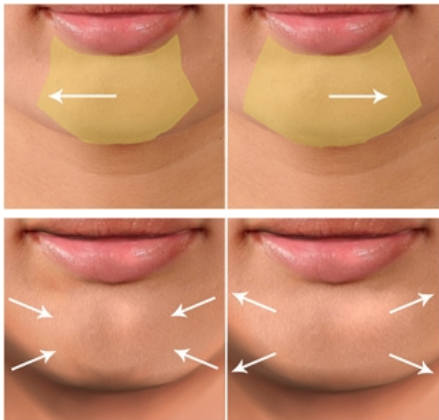
- Horizontally Dragging - To rotate the ears front or back.



Chin Area



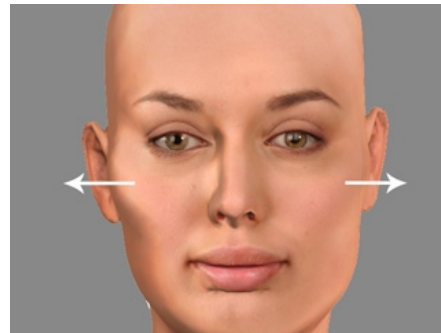
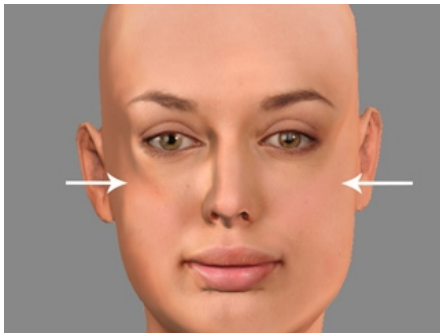
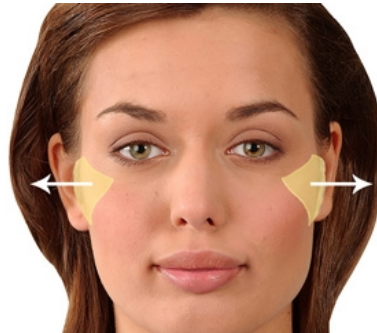
- Horizontally Dragging - To adjust the width of the chin.



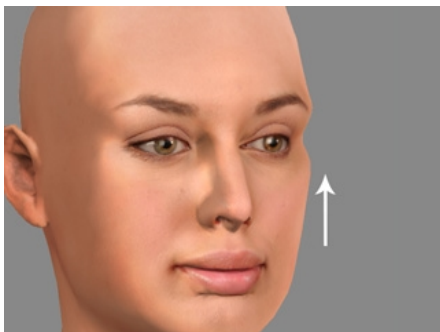
Outer Cheekbone Areas



- Horizontally Dragging - To adjust the width of the cheekbones.



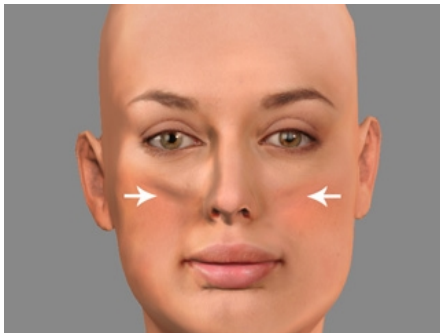
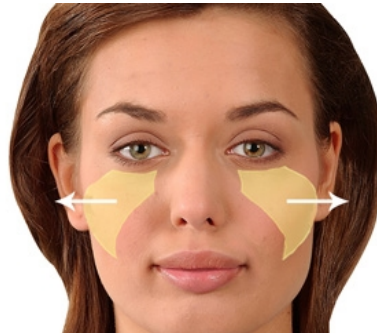
- Vertically Dragging - To adjust the height of the outer cheek bones.



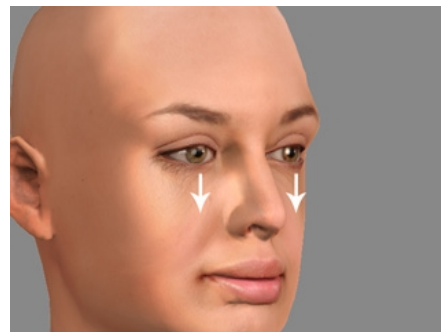
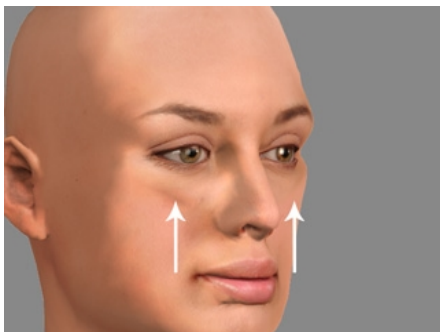
Inner Cheekbone Areas



- Horizontally Dragging - To adjust the width of the inner cheekbones.



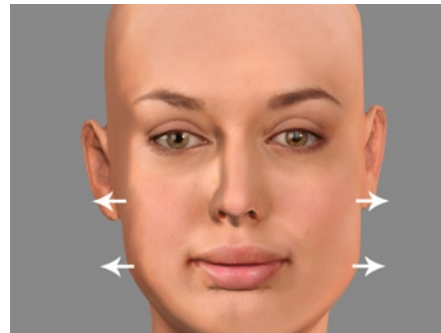
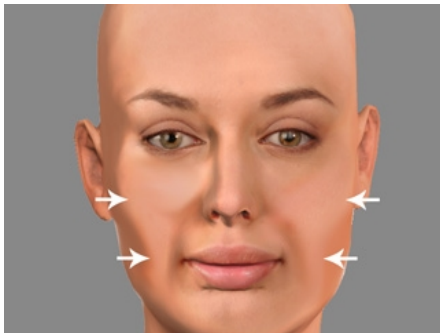
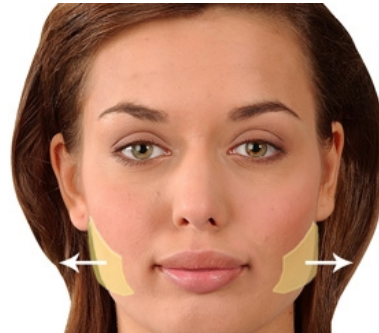
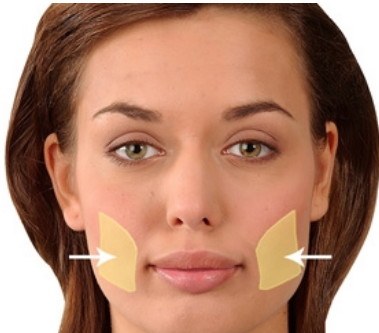
- Vertically Dragging - To adjust the height of the inner cheekbones.



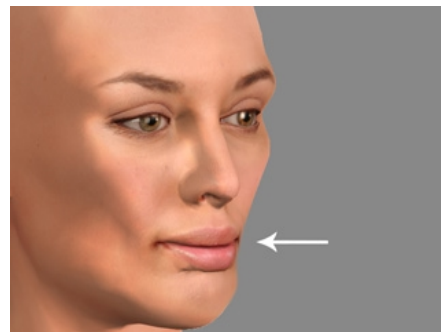
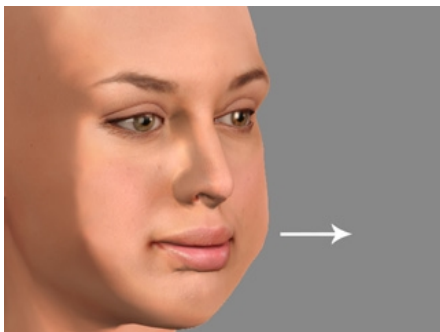
Cheek Areas



- Horizontally Dragging - To determine the width of the cheeks.



- Vertically Dragging - to determine the thickness of the cheeks.

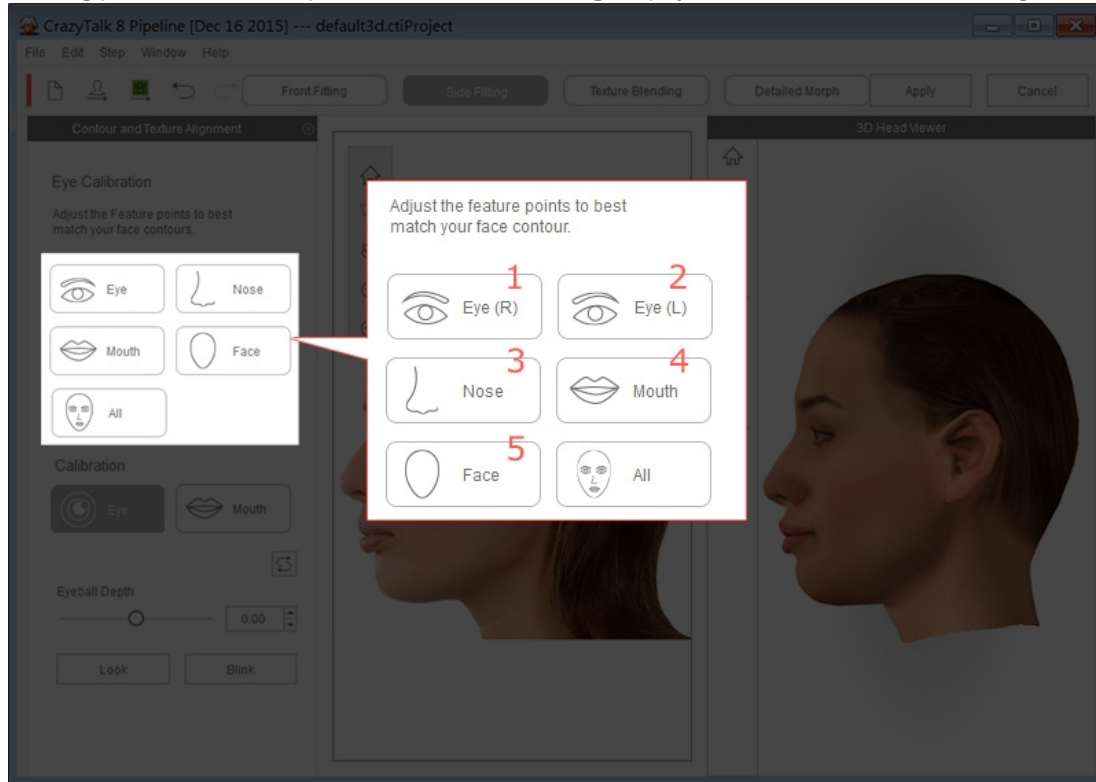


Note

The dragging in the morph areas maps to the facial feature sliders in the Detail Morph step. Refer to the Fine-tuning with Detail Morph section for more information.

Side Face Fitting (New for Version 8)

CrazyTalk provides a precise fitting solution to locate the head profile from your image with side face, which serves as the crucial starting point for the facial profile. In the **Side Fitting** step, you will need to fit the following facial features accurately in each step.



Step 1: Eye - [Setting Eyes and Eyebrows Depths](#)

Step 2: Nose - [Setting Nose Depths and Nostril Lengths](#)

Step 3: Mouth - [Fitting Mouth Depths](#)

Step 4: Face - [Setting Nose Depths and Nostril Lengths](#)

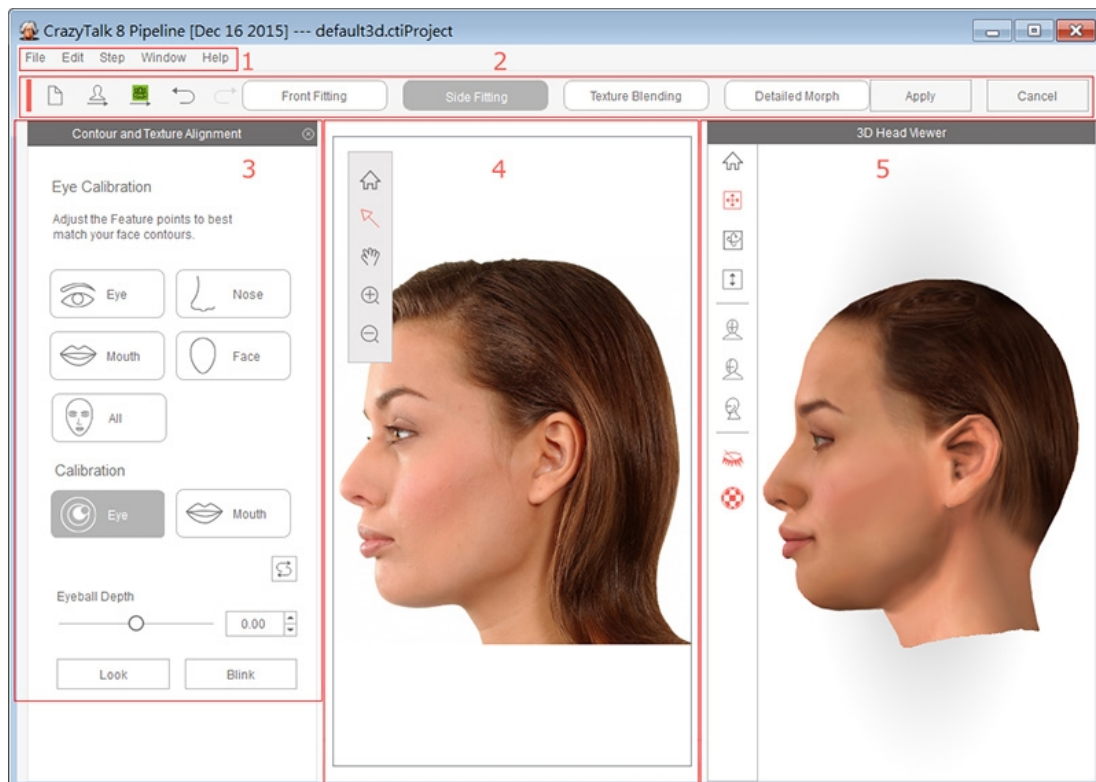
Step 5: All - Previewing the Fitting Result

Step 6: Calibration - [Calibrating Eyeballs, Teeth and Tongue](#)

Note

Please refer to the [Introduction of Side Face Fitting Page](#) section for more information about the user interface of this page.

Introduction of Side Face Fitting Page (New for Version 8)

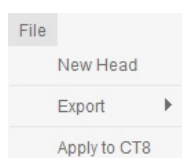


1.

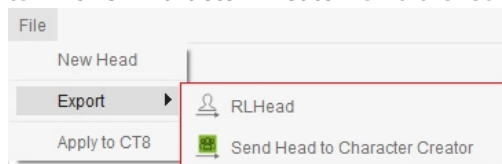
Main Menu

The main menu contains several frequently used menus:

- **File**

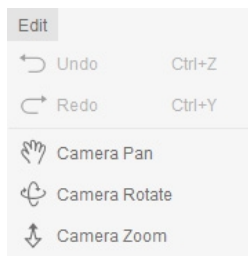


- New Head - To abort the current works and create a new 3D actor from scratch.
- Export - Export the head of the current 3D actor as a **RLHead** file (in *.rlHead format) or send the head to **iClone Character Creator** for further editing.



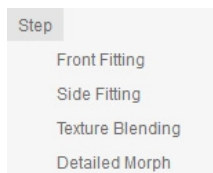
- Apply to CrazyTalk- Apply the currently being created head to the main program.

- **Edit**



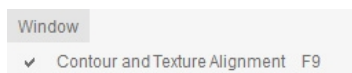
- Undo - To undo the last action.
- Redo - To redo the last action that has been undone.
- Camera Pan - To move the preview camera of the 3D view port.
- Camera Rotate - To rotate the preview camera around the 3D actor in order to check it from different perspective.
- Camera Zoom - To zoom in or zoom out the preview camera for viewing the 3D actor closer or farther.

- **Step**



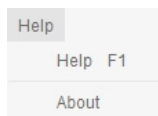
- Front Fitting - To fit the detail feature points to the front facial features.
- Side Fitting - To fit the detail feature points to the profile line of the photo with side face.
- Texture Blending - To determine the level of the blending areas formed by the front and side images.
- Detailed Morph - To adjust the facial feature more detail with morphing technology.

- **Window**



- Contour and Texture Alignment - To show or hide the **Contour and Texture Alignment** panel for modifying the current 3D actor.
-

• Help



- Help - To open the **CrazyTalk** online manual with browser.
- About - To show the basic information about **CrazyTalk**.



2.

Toolbar

The toolbar contain tools for creating new head, undo or redo actions, fitting steps and apply the current 3D actor back to the stage.

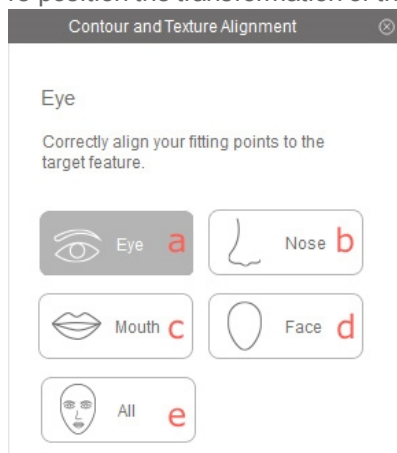


- New Head - To abort the current works and create a new 3D actor from scratch.
- Export RL Head- Export the head of the current 3D actor in *.rlhead format.
- Send Head to Character Creator - Send the currently being created head to **iClone Character Creator**.
- Undo and Redo - To undo the last action or redo the action that has been undone.
- Front Fitting - To fit the detail feature points to the front facial features.
- Side Fitting - To fit the detail feature points to the profile line of the photo with side face.
- Texture Blending - To determine the level of the blending areas formed by the front and side images.
- Detail Morph - To adjust the facial feature more detail with morphing technology.
- Apply to CrazyTalk - To leave the 3D-actor-creating procedure and apply the currently created actor to the stage.
- Cancel - To abort current work and return back to stage.

3.

Contour and Texture Alignment

In the Contour and Texture Alignment panel, you are lead to set the detail feature points to the facial features in the photo by different sub-steps, such as **RightEye**, **LeftEye**, **Nose**, **Mouth**, **Face**, **All** (for previewing), and even basically re-position the transformation of the eyeballs, teeth and tongue.



- Eye- This sub-step shows the wireframes and points of the eye and eyebrow. You can determine the depths of the eyebrow bones and the eyes.
- Nose - In this sub-step, you can determine the shape of the nose of the 3D actor in order to match the nose look of the face in the photo. Because the nose is the most extrusive feature on the face, the similarity stands a crucial position for creating a same 3D actor as the one in the photo.
- Mouth - You can set the extrusion of the lips in this sub-step.
- Face - The face sub-step determines the entire skull of the 3D actor, including the forehead, the back of the head, the chin, and the jaw. Fitting the feature points to the head in the photo increases the persuasion that the 3D actor is the same one as in the photo.
- All - In this sub-step, you can preview the entire fitting result in the previous sub-steps and do some further adjustments.

4.

Original Photo View

In the **Original Photo View**, the imported photo are displayed. You can zoom in, zoom out or move the photo in order to easily comparing the looks between the photo and the 3D actor.

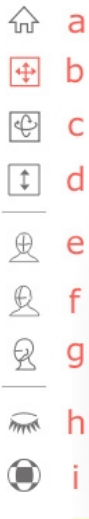


- Home - Click this button to fit the entire photo to the view window.
- Edit Mode - Press down this button to select the wireframe or the feature points before move them.
- Pan Tool - To move the camera of the view port as you zoom in to check out the photo.
- Zoom In - To zoom in the camera for viewing the photo closer. You can also roll up the mouse wheel to zoom in.
- Zoom Out - To zoom out the camera for viewing more of the photo. You can also roll down the mouse wheel to zoom out.

5.

3D Head View

This view displays the facial fitting results of the 3D actor. You are allowed to observe the 3D head from different perspectives. Furthermore, by turn on or off the eyelashes, you can inspect the eyes more clearly.



- a. Home - Click this button to fit the entire 3D head to the 3D head view window.
- b. Camera Pan - To move the camera of the view port as you zoom in to check out the 3D head.
- c. Camera Rotate - To rotate the camera around the 3D head for viewing the 3D head from different angles.
- d. Camera Zoom - To zoom in or out the camera for viewing the 3D head in near or far distance. You can also roll the mouse wheel to zoom in our zoom out.
- e. Front View - To snap the camera to the front view of the 3D head.
- f. 45 Degrees - To snap the camera to the 45 degree view of the 3D head.
- g. Side View - To snap the camera to the side view of the 3D head.
- h. Eyelashes On / Off - To show or hide the 3D eyelashes for observation the eyes.



Eyelash Off



Eyelash On

- i. Preview Resolution - To switch the displaying mode for the mapped face texture in 1024 or 2048 resolution.



1024



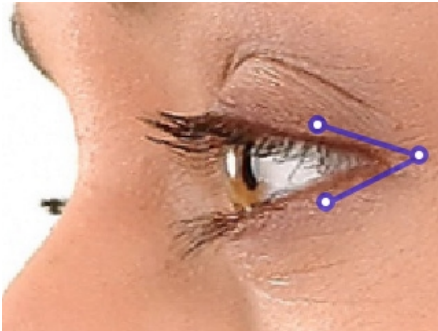
2048

Setting Eyes and Eyebrows Depths (New for Version 8)

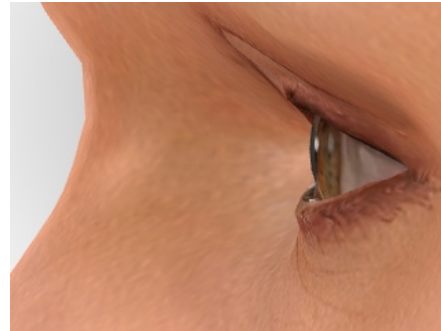
Outlining the eyes and eyebrows is important to determine the depth of the 3D actor in **CrazyTalk**. Go to the **Eye** section and adjust the fitting points and lines to match the facial features.

Fine-tuning the Eyes Depths

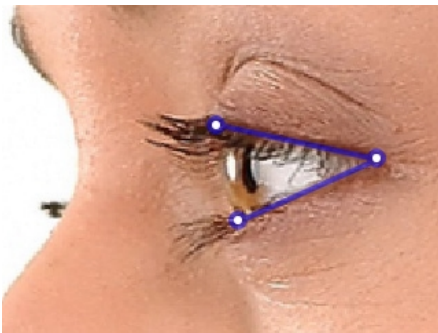
The wireframe for the eye shape in this sub-step influence the depth of the eyes. To achieve best results, adjust the fitting points and lines as shown in the illustration below:



The initial positions detected by **CrazyTalk**.



The eyes are too inset.



The wireframe and feature points are adjusted.



The depth of the eyes is more realistic.

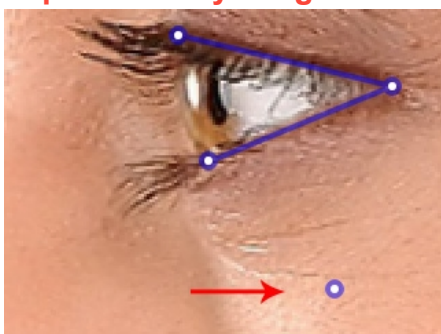
Note

The points and lines only determine the depths of the eyes, moving them up or down does not influence the shape defined in the [Fitting the Eyes and Eyebrows](#) of the [Front Face Fitting](#) step.

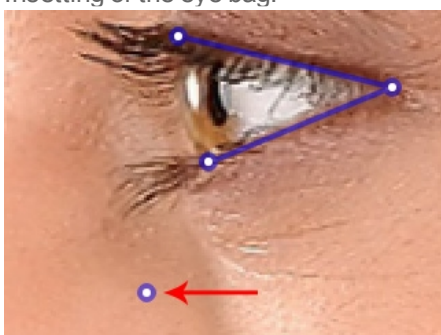
Forming the Lower Eyelid

To form more realistic eyes, you need to form the lower eyelids in order to imply the age and the 3D shapes of the eyes.

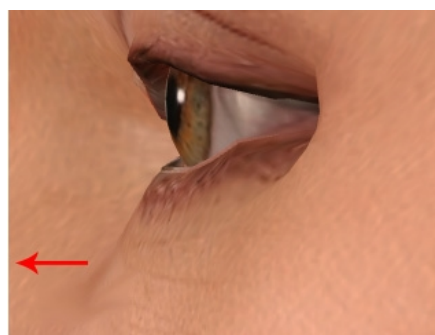
- Depth of the eye bag.**



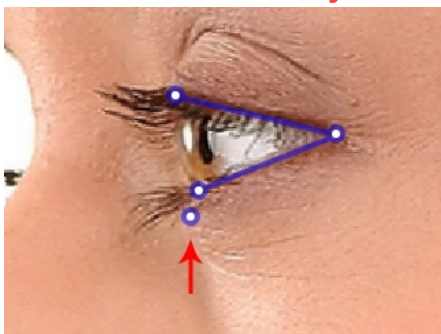
Insetting of the eye bag.



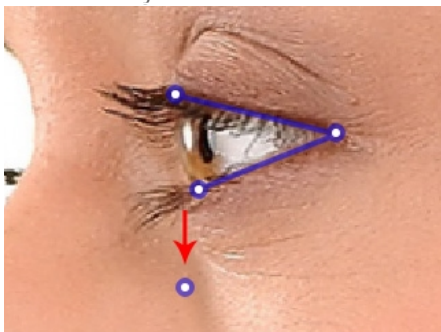
Extrusion of the eye bag.



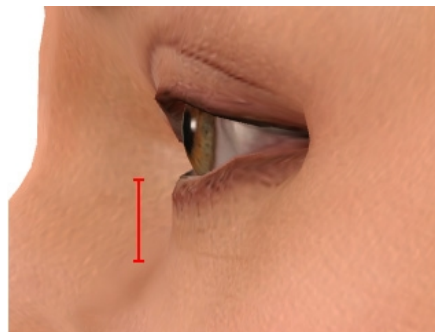
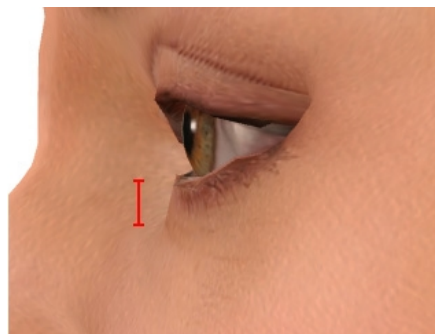
- Thickness of Lower Eyelid**



Thin lower eyelid.

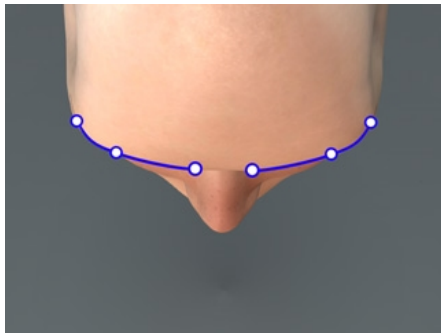


Thick lower eyelid.

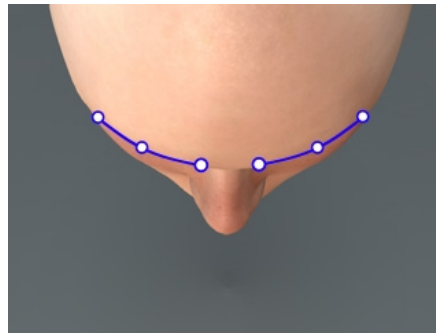


Setting Eyebrows Depths

The brow bone shape can reaffirm certain personality types.

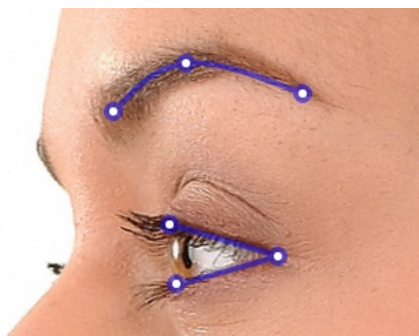


An actor with firm personality. Suitable for men.

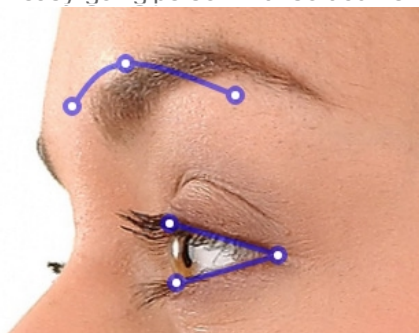


An easy-going person. Suitable for women.

Move the points or the entire line to determine the depths of the three eyebrow points to designate the personality of the actor.



An easy-going person with soft curve lines of the eyebrow bones.



A firm person with hard and extrusive curve lines of the eyebrow bones.



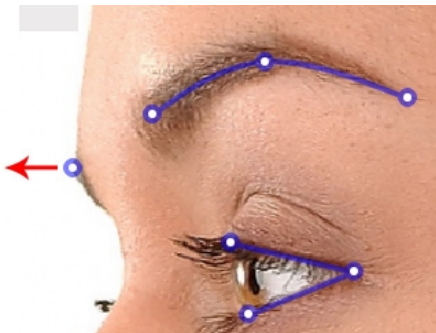
Note

The points and lines only determine the depths of the eyebrow bones, moving them up or down does not influence the shape defined in the [Fitting the Eyes and Eyebrows](#) of the [Front Face Fitting](#) step.

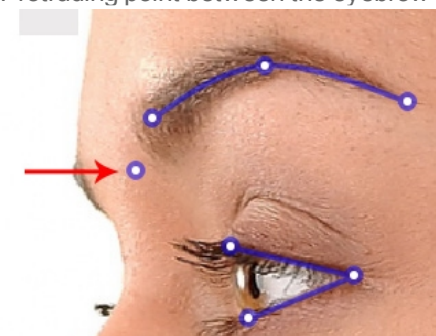
Setting Depths Between Eyebrows

The point between the eyebrow bones forms the shapes of the eyebrow bones more completely.

Move the points to determine the depths of the point as near as you can to form the curve around the eyebrow in the side image.



Protruding point between the eyebrow bones.



Deeper point between the eyebrow bones.



Note

The points and lines only determine the depths of the eyebrow bones, moving them up or down does not influence the shape defined in the [Fitting the Eyes and Eyebrows](#) of the [Front Face Fitting](#) step.

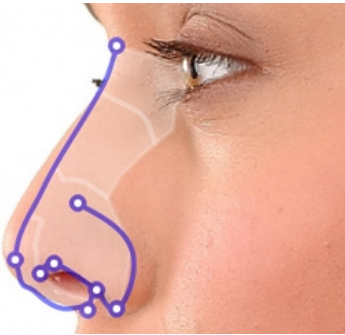
Note

Once eyebrow and eye definitions have been established, you can always go back and adjust them at any point in your side facial feature fitting processes.

Setting Nose Profile and Nostril Lengths (New for Version 8)

The profile curve of the nose is important to show the characteristics of the actor as well; moreover, the curve plays an crucial role to show the gender, race, age of the actor.

Once you enter this sub-step, you may see the profile of the nose is automatically generated with inadequate appearance.

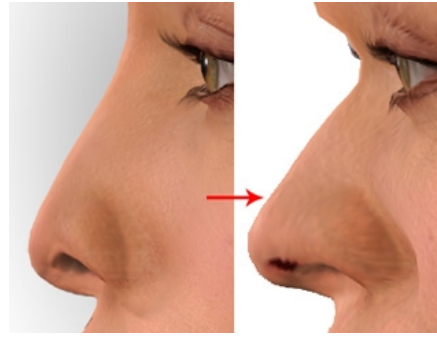
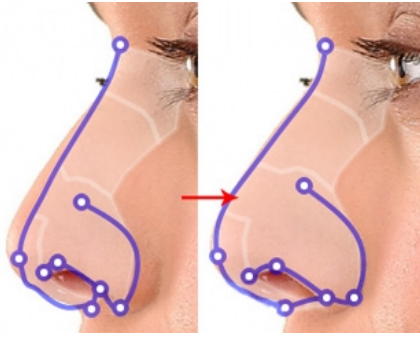


The auto-generated profile curves



Inadequate side nose appearance

Unlike the fitting methods you do in the front [Fitting Nose](#) page, it is highly suggest set the curve first with the morphing areas before fitting the feature points.

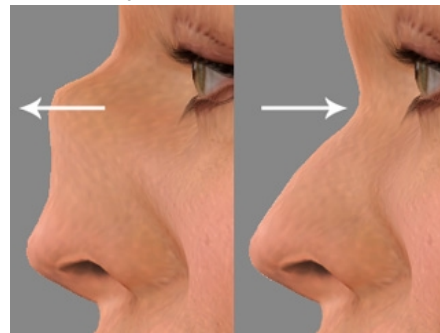
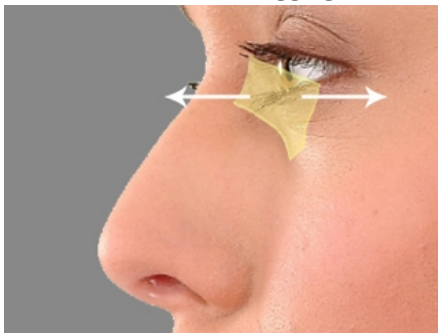


Morphing Nose

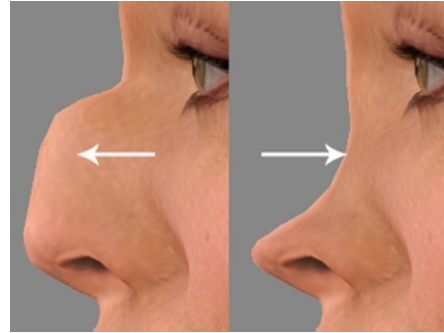
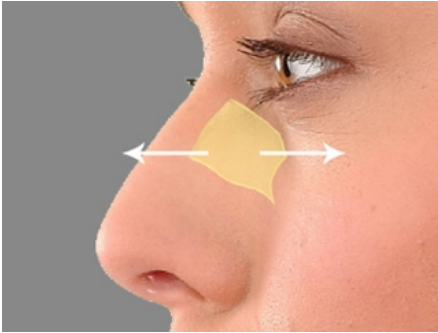
Using the morphing areas to obtain a curve line that look similar to the profile of the side face in the photo.



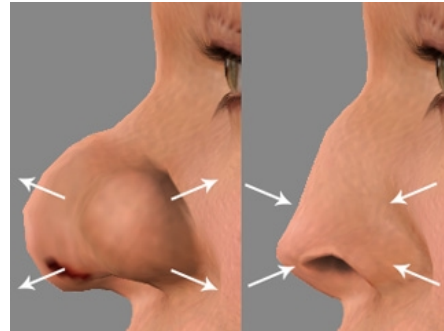
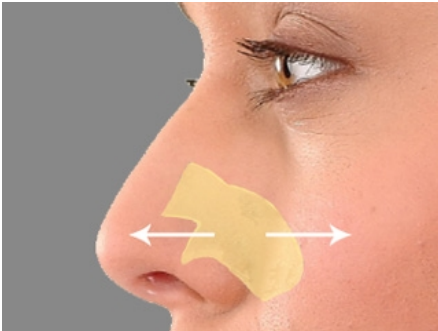
- The nose root area - Dragging within this area horizontally can set the depth of the nose root.



- The nose bridge area - Dragging within this area horizontally can set the depth of the nose bridge.

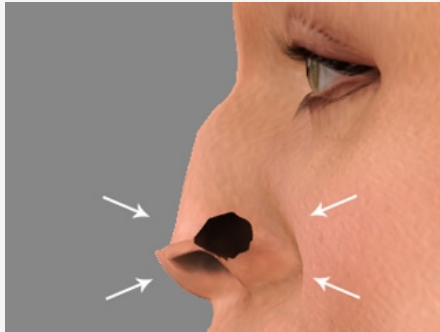


- The nose size and alea area - Dragging within this area horizontally can adjust the size of the nose and alea.

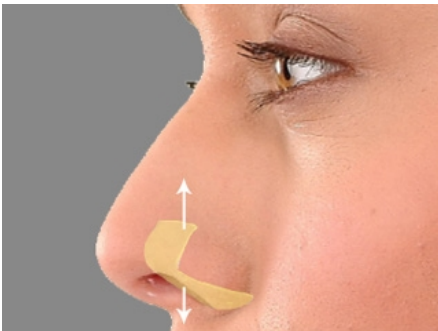


Note

- Adjusting within this area is the same as you do for the nose morphing method in the [Fitting Nose](#) step.
- Please note that over shrinking the nose size may encounter the mesh-broken issue.



- The nose tip area - Dragging within this area vertically can adjust the height of the nose tip.

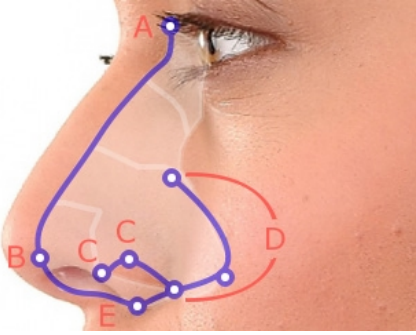


Note

The dragging in the morph areas maps to the facial feature sliders in the **Detail Morph** step. Please refer to the [Fine-tuning with Detail Morph](#) section for more information.

Fine-tuning Nose Curve Position

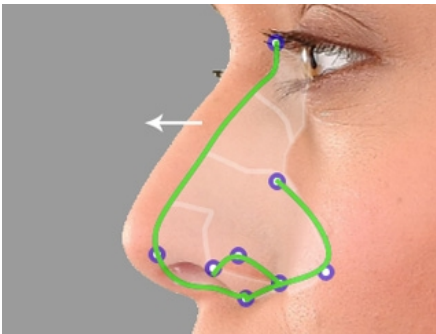
After the basic curve line is approximately determined, you may then use the deform feature points to fine-tune the shape of the nose, including the shape of the nostrils.



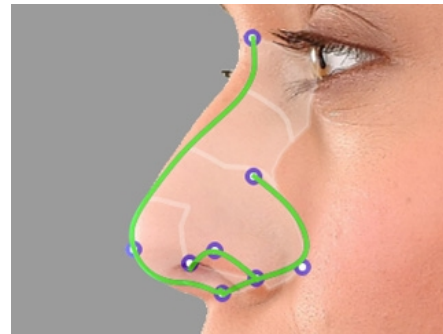
- A. Nose Root - Fit this point to the nose root of the face in the photo.
- B. Nose Tip - Fit this point to the tip of the nose.
- C. Nostril Points - These two points should be moved to the front and side edges of the nostrils.
- D. Nose Ala - Move the three points to frame up the ala.
- E. Nose Base - Move the bottom point to the base of the nose.

Using the Deform Points

1. Drag the entire set of the wireframe lines to fit the nose in the photo by directly dragging it.



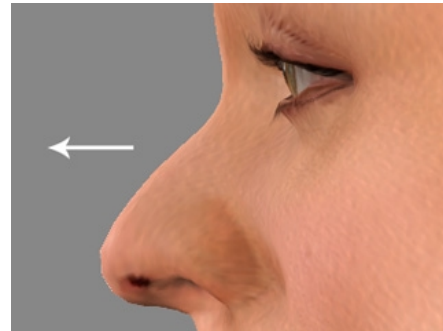
The initial position detected by **CrazyTalk**.



Move the set of wireframe lines to fit the nose in the photo.

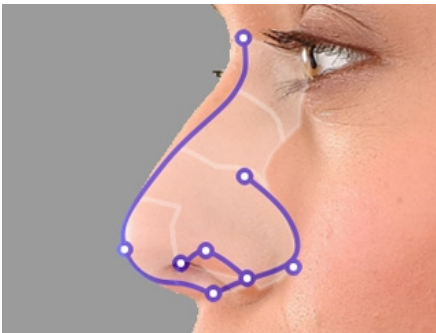


The initial position of the nose.

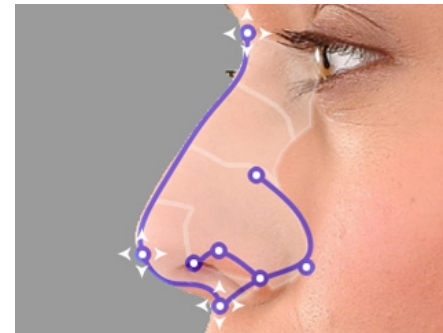


The nose is moved more outward from the face.

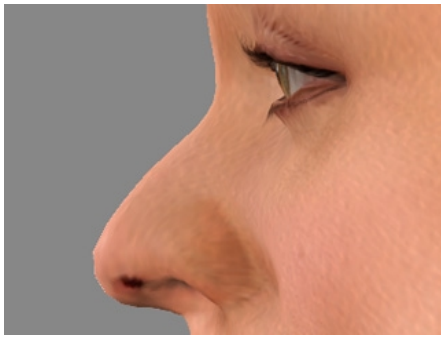
2. Move the nose root, tip and base points if necessary.



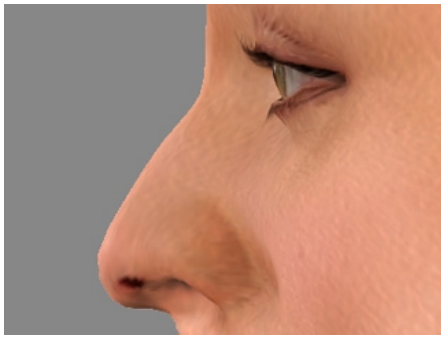
The positions of the nose base, tip and bottom points.



Move the points to fit the proper positions in the photo.

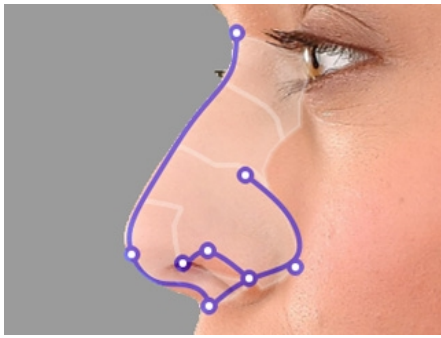


The appearance of the nose before adjustments.

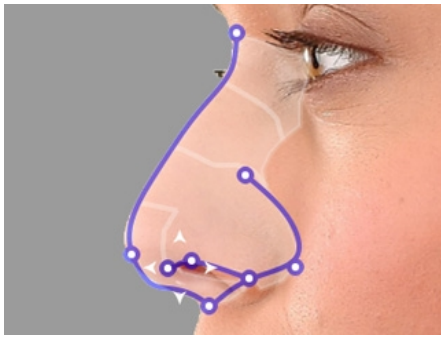


The three points are adjusted to have the look more similar to the one in the photo.

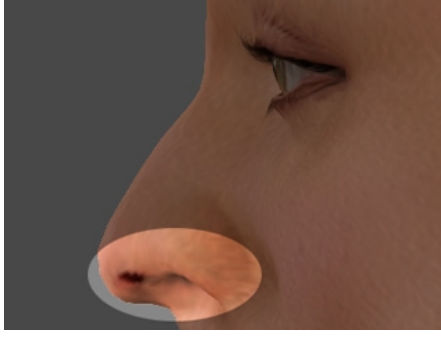
3. Adjust the two nostril points to form the shape of the nostril.



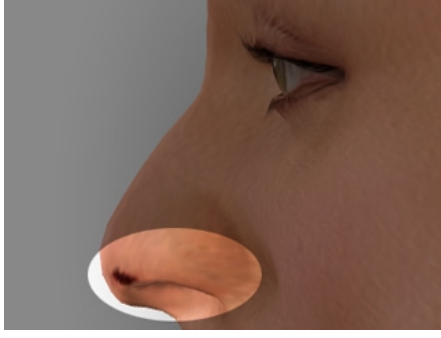
The positions of the nose base, tip and bottom points.



Move the points to fit the proper positions in the photo.

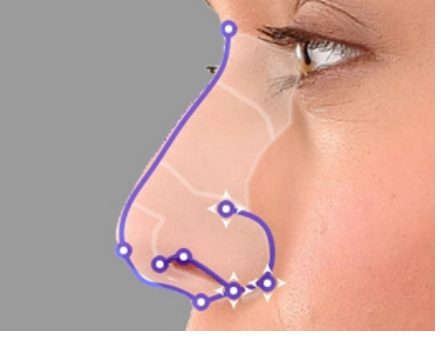
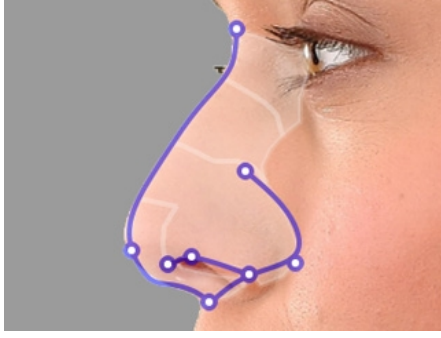


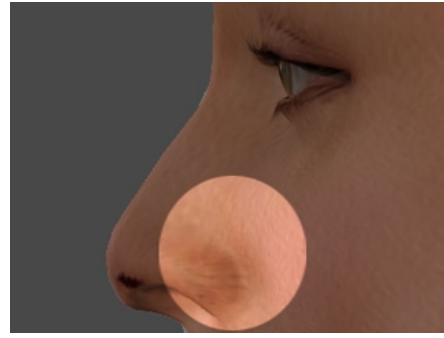
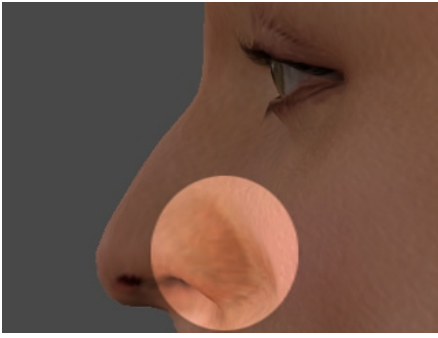
The appearance of the nose before adjustments.



The three points are adjusted to have the look more similar to the one in the photo.

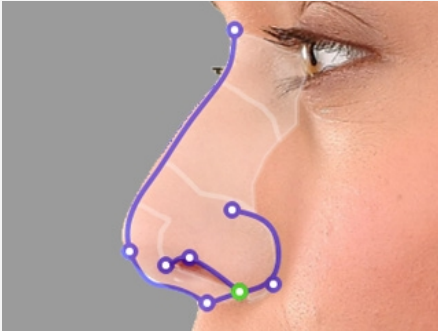
4. Adjust the three ala points to form the shape of the nose alea.





Note

The lowest point of the three forms is a special point, which forms both the shapes of nostrils and the alae.



5. Fine tune the morphing area and the points in order to optimize the fitting result for the nose.

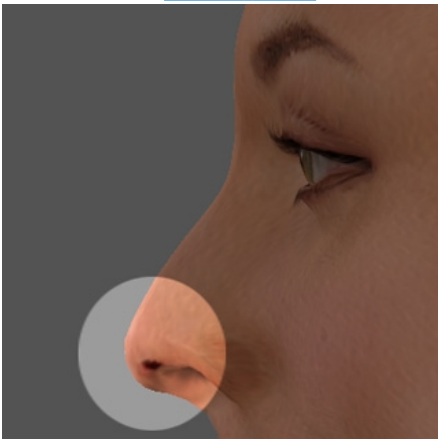


The original photo of the nose.



The fitting result.

6. Check out the [Fitting Nose](#) section for fixing the dirty spot under the nose tip.

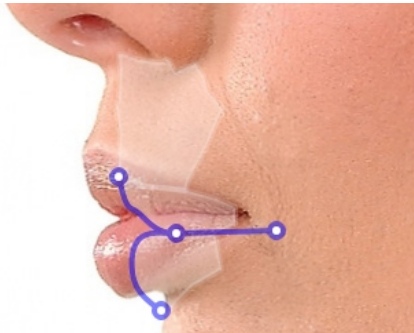


Setting Mouth Depths (New for Version 8)

Setting the feature points and lines as close as possible to the shape of the mouth in the photo is crucial for identity, which is second only to the nose profile.

Fine-tuning Mouth Position

Click on the points to form the curve line of the lips, or click on the line segment to drag the wireframe closer.



The initial position detected by **CrazyTalk**.



The lips are not in proper alignment.



Manually adjust the points to match the lips in the photo.



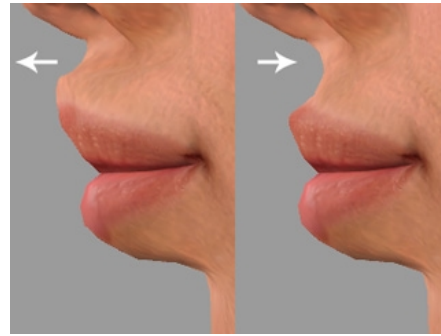
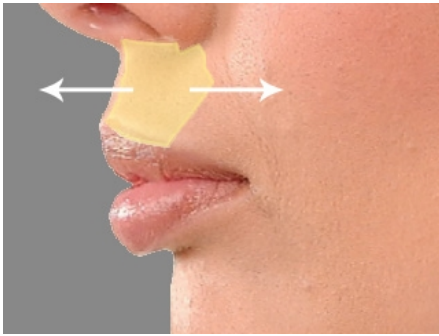
The distance between the nose resembles more closely to the photo.

Morphing Philtrum and Lips

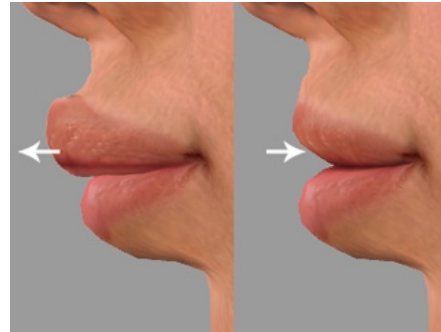
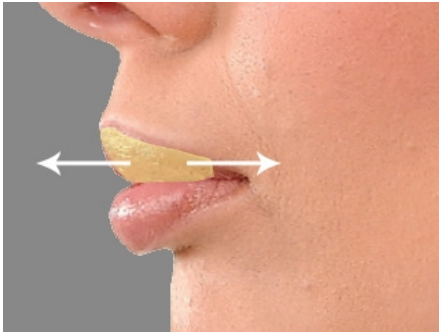
After deforming the lips shape by fitting the feature points, if you need to fine-tune the thickness of the lips and the curve of the philtrum, then you can drag the highlighted area as shown below.



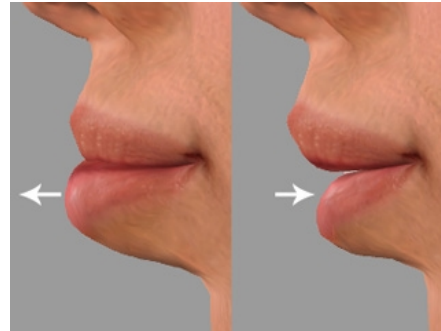
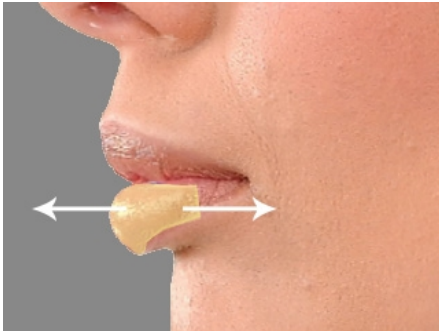
- The philtrum morphing area - Dragging within this area horizontally to adjust the curve of the philtrum.



- The upper lip morphing area - Dragging within this area horizontally to adjust the thickness of the upper lip.

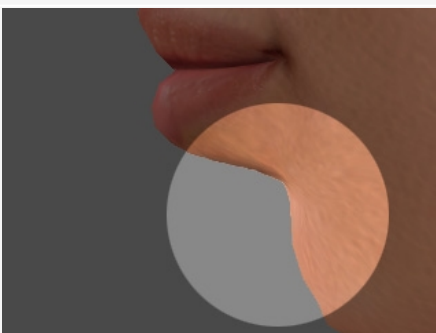


- The lower lip morphing area - Dragging within this area horizontally to adjust the thickness of the lower lip.



Note

The shape of the chin might be unsatisfying, you need to go to the [Fitting Chin and Jaw Contour](#) step to fix the profile line of the chin and jaw.



Before adjustments



After adjustments

Fitting Head Contour (New for Version 8)

The profile curve of the head is important for putting hair onto a 3D actor. Even without hair, the shape of a bald head should be as similar as the one in the photo in order to create a realistic 3D actor from photo.

Once you enter this sub-step, you may see the profile of the head is automatically generated with somewhat unsatisfying appearance.

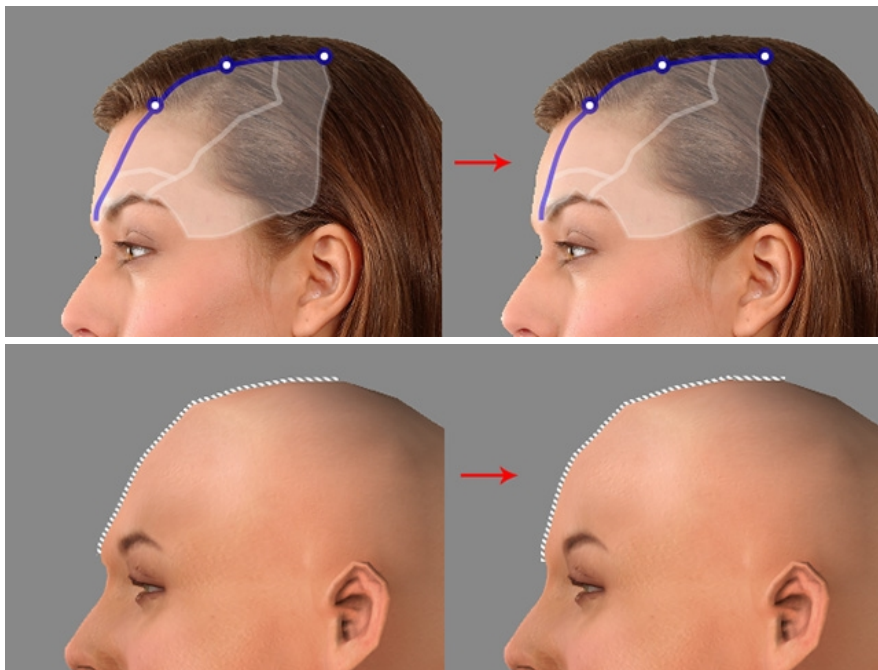


The auto-generated profile curves



Inadequate side head appearance

Unlike the fitting methods you do in the front [Fitting Head](#) page, it is highly suggest set the curve first with the morphing areas before fitting the feature points.



Morphing Head

Using the morphing areas to obtain a curve line that look similar to the profile of the side face in the photo.



- The skull angle area - Dragging within this area horizontally to set the entire angle of the skull, forehead and eyebrow bone.



- The forehead area - Dragging within this area horizontally to set the angle of the forehead.



- The eyebrow bone area - Drag this area horizontally to adjust the smoothness of the eyebrow bone curve.



Note

The dragging in the morph areas maps to the facial feature sliders in the Detail Morph step. Please refer to the **Detail Morph** step. Please refer to the [Fine-tuning with Detail Morph](#) section for more information.

Fine-tuning Head Curve Position

After the basic curve line is approximately determined, you may then use the deform feature points to fine-tune the shape of the head.



The initial position detected by **CrazyTalk**.



Move the set of wireframe lines to fit the photo as much as possible.



The initial shape of the head.



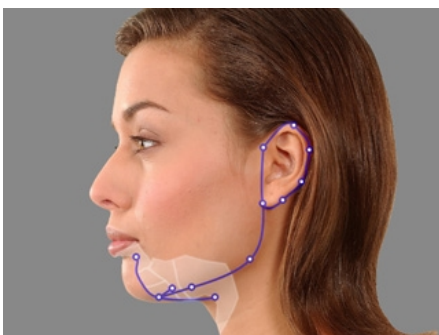
The head shape is adjusted to make it look more similar to the photo.

Fitting Chin and Jaw Contour (New for Version 8)

Fitting the chin and jaw contour can make the lower face proportions more accurate. You should first adjust the deform points for an approximate shape before fine-tune with the morph regions.

Fitting Chin and Jaw with Feature Points

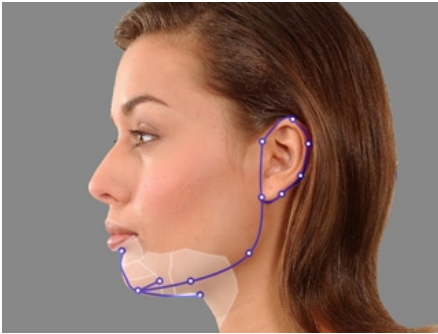
Move the points to fit the outline of the chin and jaw contour, or click on the line segments to drag the entire wireframe into position.



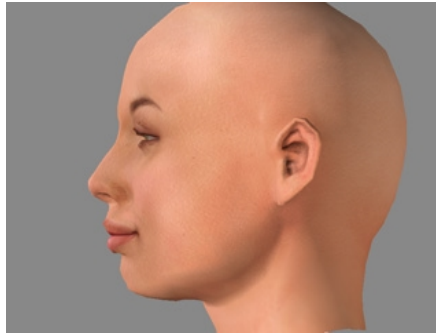
The initial position detected by **CrazyTalk**



The chin shape of the 3D actor deviates too much from the one in the photo.



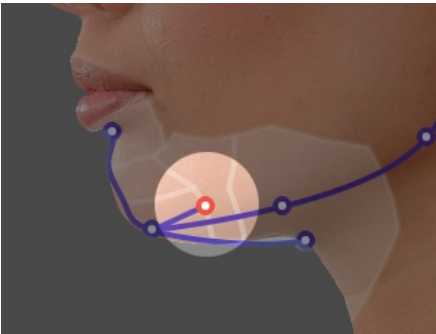
Manually adjust the points to match the head in the photo.



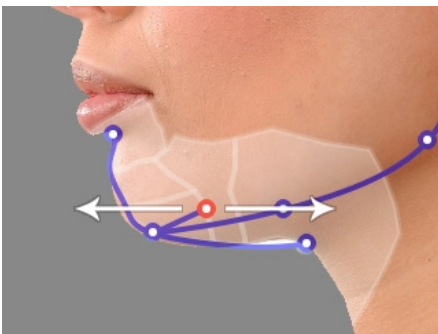
Now the head of the 3D head looks almost the same as the one in the photo.

Special Point

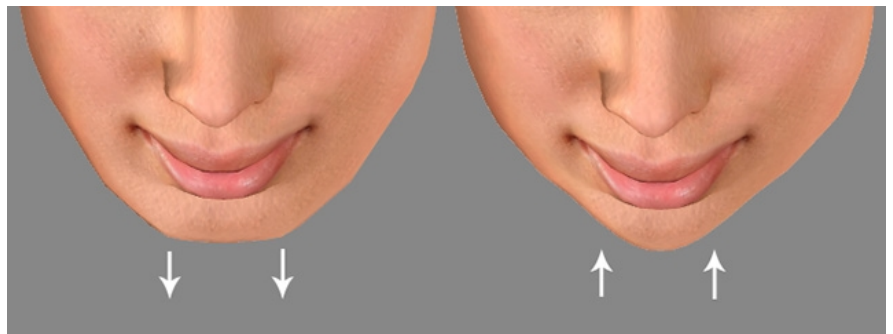
There is one special points that also influence the appearance of the chin from the front view. it is the one shown in the illustration below:



You can rotate the camera view to front-top 45 degrees to observe the function of this point.



Move this point horizontally



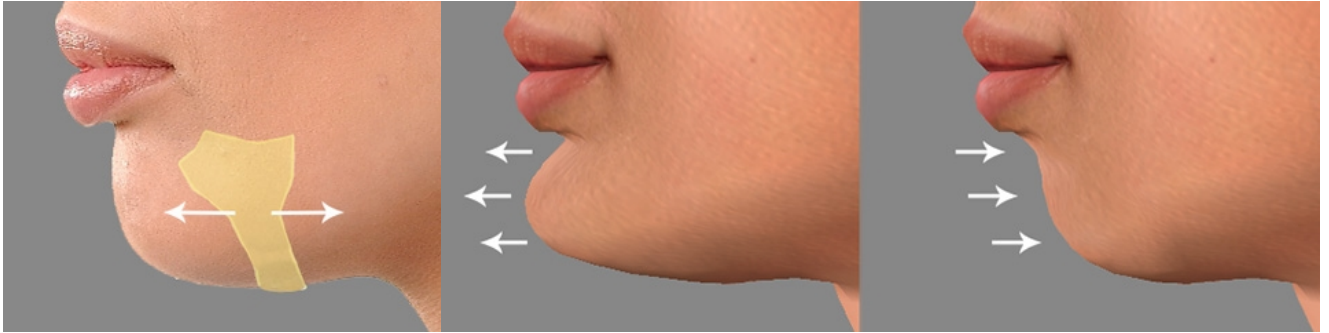
The appearance of the chin and jaw in front-top 45 degrees

Morphing Areas for Chin and Jaw

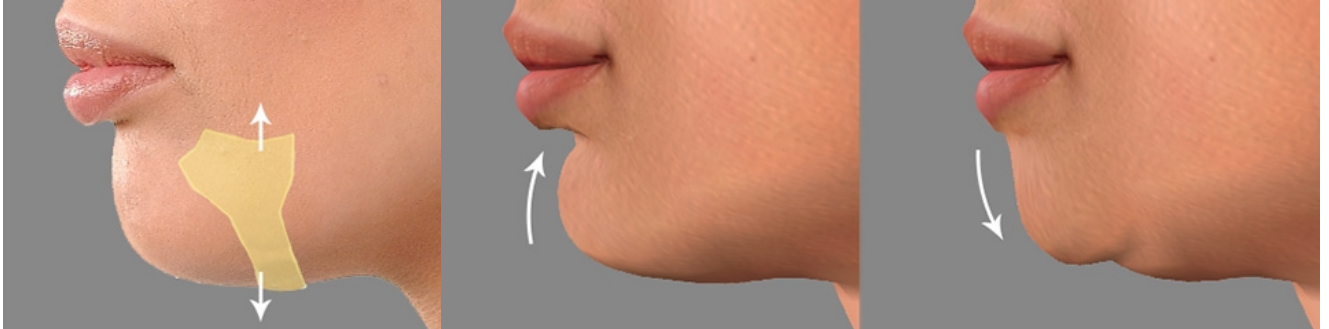
After fitting the chin by fitting the feature points, if you need to fine-tune its shape, then you can drag the highlighted areas as shown below.



- The chin base area - Drag within these areas horizontally to protrude or withdraw the entire chin.



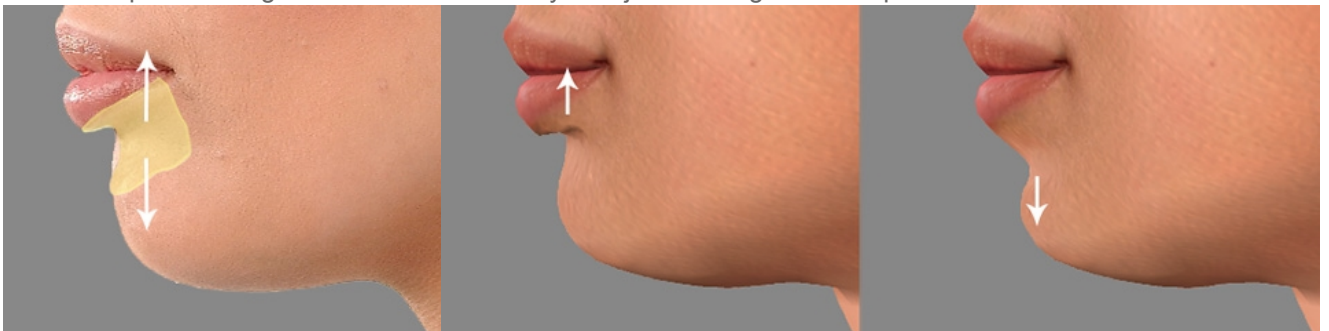
- The chin base areas - Drag within this area vertically to adjust the height of the chin tip.



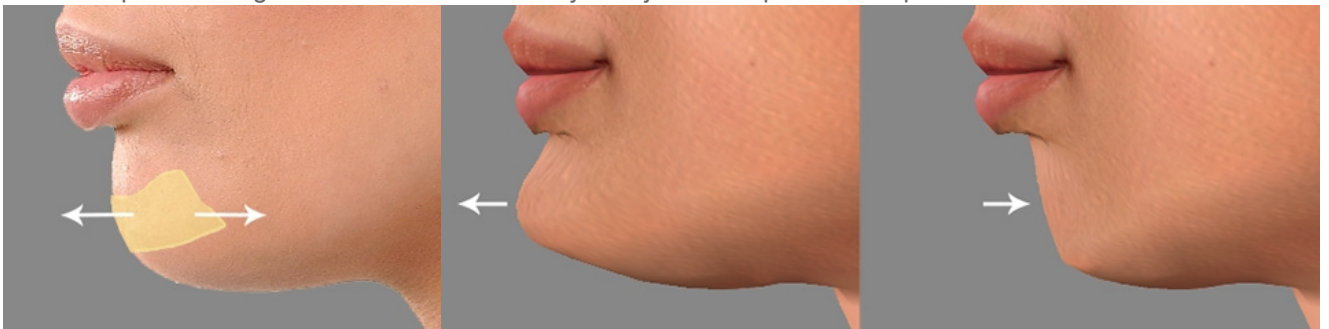
- The chin top area - Drag within this area horizontally to protrude or withdraw the top part of the chin.



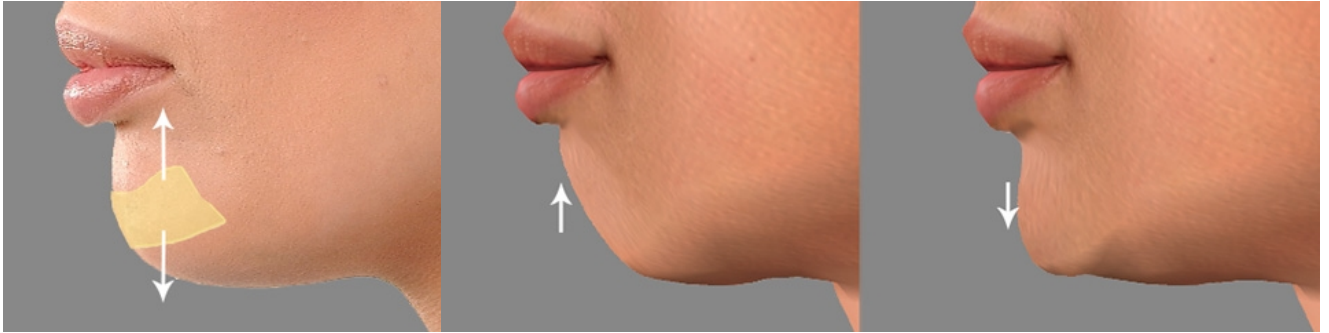
- The chin top area - Drag within this area vertically to adjust the height of the top of the chin.



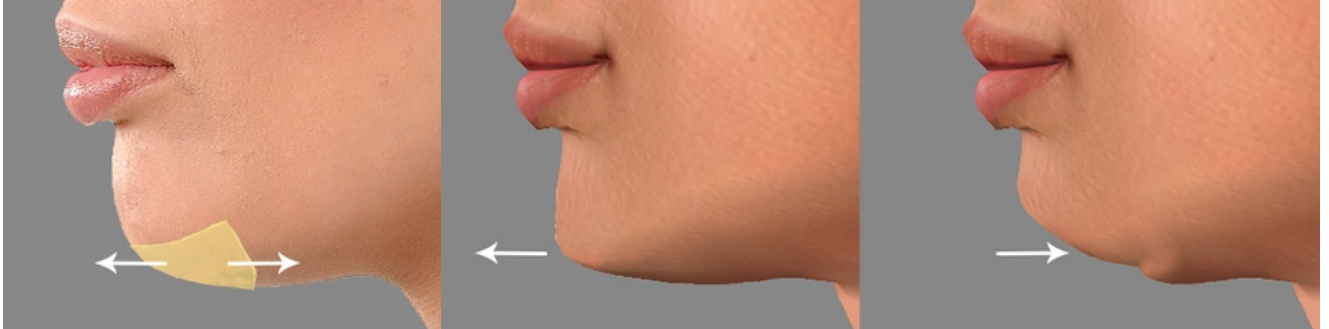
- The chin tip area - Drag within this area horizontally to adjust the depths of the tip of the chin.



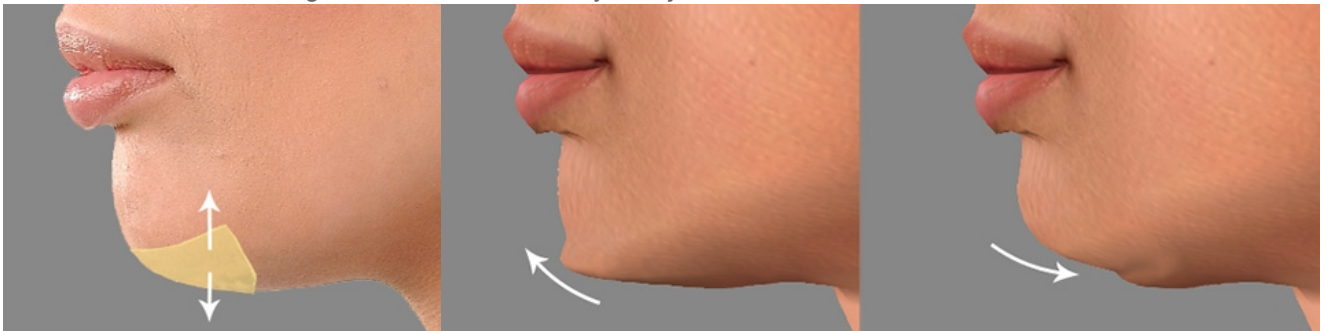
- The chin tip area - Drag within this area vertically to adjust the height of the tip of the chin.



- The chin bottom area - Drag within this area vertically to distinct or flatten the tip of the chin.



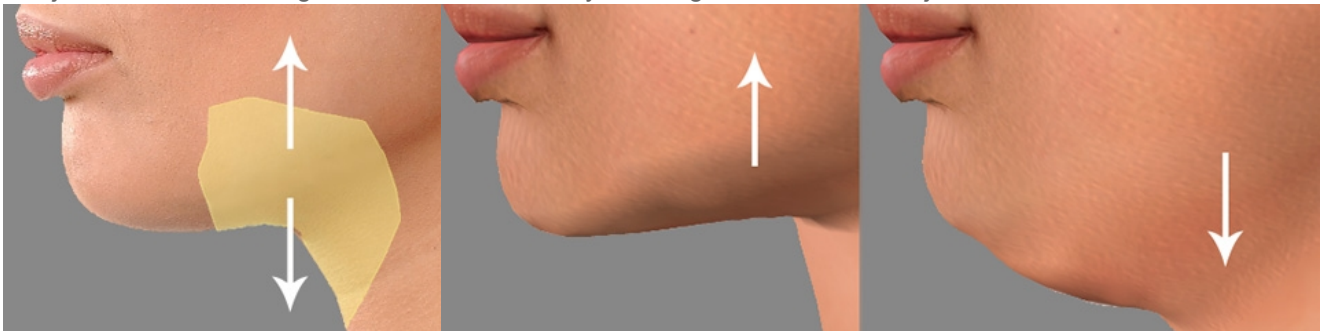
- The chin bottom area - Drag within this area vertically to adjust the roundness of the lower chin.



Note

You need to adjust these morphing areas in tandem to get the best results. Adjusting only one of them does not guarantee a natural appearance of the chin.

- The jaw bottom area - Drag within this area vertically to change the volume of the jaw.



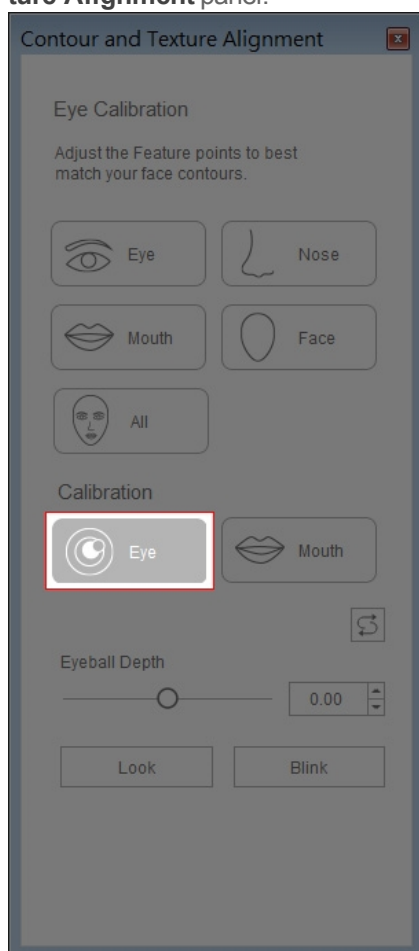
Calibrating Eyeballs, Teeth and Tongue (New for Version 8)

When you are creating a new 3D actor's head by setting the facial details or morphing the facial features in the [Front Face Fitting](#) or [Side Face Fitting](#) steps, the eyeballs, teeth and tongue sometimes pop out of the skull especially when the profile of the actor is very exaggerated as shown below:



This issue often occurs during the [Side Face Fitting](#) step. When you encounter this problem, you need to recalibrate by following the steps below:

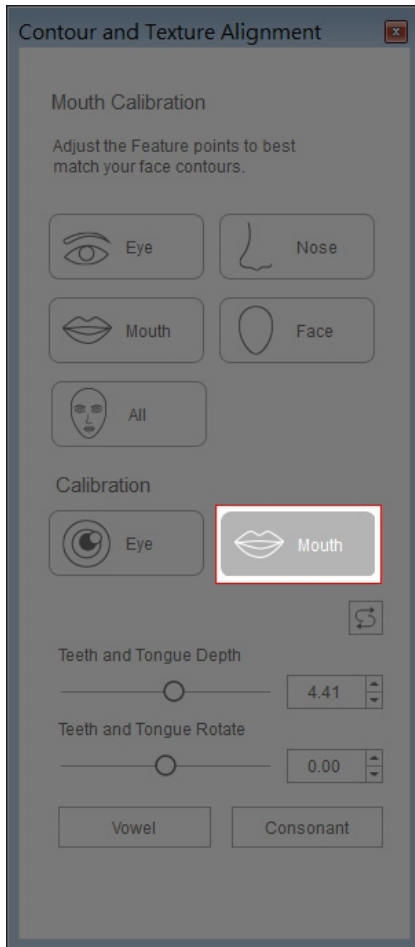
1. In the **Front Fitting** or **Side Fitting** steps, click on the **Eye** button within the **Calibration** section in the **Contour and Texture Alignment** panel.



2. Drag the **Eyeball Depth** slider to move the eyeballs back to proper position.



3. Click to switch to the **Mouth** mode.



4. Drag the **Teeth and Tongue Depth** slider to move the teeth and tongue back into the mouth.



Note

You can also rotate the teeth and tongue by dragging the **Teeth and Tongue Rotate** slider if needed.

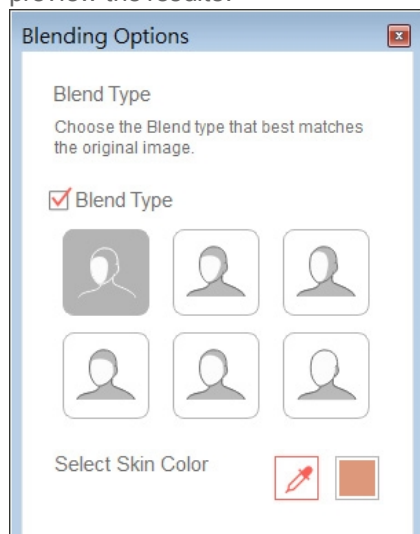
Using Textures Blending for Front and Side Photos (New for Version 8)

In the **Texture Blending** step, you are able to determine the level of spread for the front and side face photos on the 3D head. Moreover, you can add skin details by overlapping pores and fine lines texture onto the original photo to increase the fidelity of the 3D head. In the illustration below is the blending result by default without any processing.



Setting Level of Spread for Face Photos

In this step, activate the **Blend Type** box and pick one of the three templates (front face photo loaded only) or six templates (front and side face photos loaded) to determine the influence of the front and side face photos. Check in the **3D Head View** to preview the results.

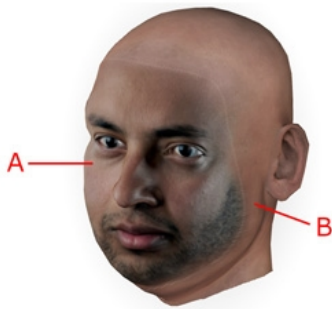


Note

If you create a 3D actor by importing only the front face image, then you can only see the top three templates.

Customizing Base Skin Color

The blending methods made by the template, actually, do not cover the entire 3D head with the loaded photos, the non-covered area will reveal the default base color automatically generated in by averaging the skin tone in the images:

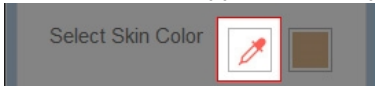


- A. This area is mapped with original front face photo.
- B. This area reveals the auto-generated color for the head model.

However, because the auto-generated color is set in accordance with the average color from the original photo, the result can not always be satisfying. You are allowed to set a customized one. You will even see the seam between the mapped photo and the base color of the head.



1. Make sure the dropper button is press down.



2. Move the dropper on the original image and click to pick a desired color.



3. The base color of the head will be changed.



Note

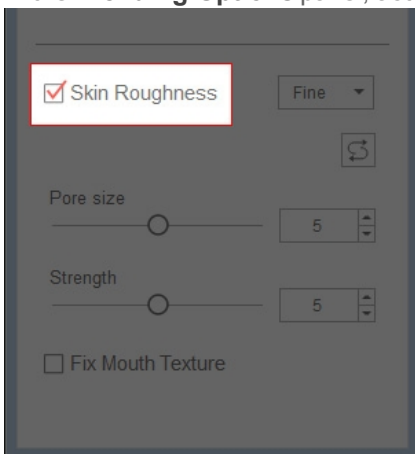
- You can also use the color picker to select a base color with the color swatch.
- The base color does not influence the texture of the body, which can cause a seam issue between the head and the body. You need to adjust the color of the body texture in order to make the seam less obvious.

Adding Skin Detail

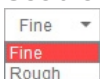
To increase the realism of the 3D actor, you can add skin details after the photos are mapped onto the actor. Given a 3D actor, as shown in the illustration below, a texture without any details will appear plasticky.



1. In the **Blending Options** panel, activate the **Skin Roughness** box.



2. Use the drop-down list to determine the roughness of the skin for the actor.



3. Drag the **Pore Size** slider to determine the size of the pores.

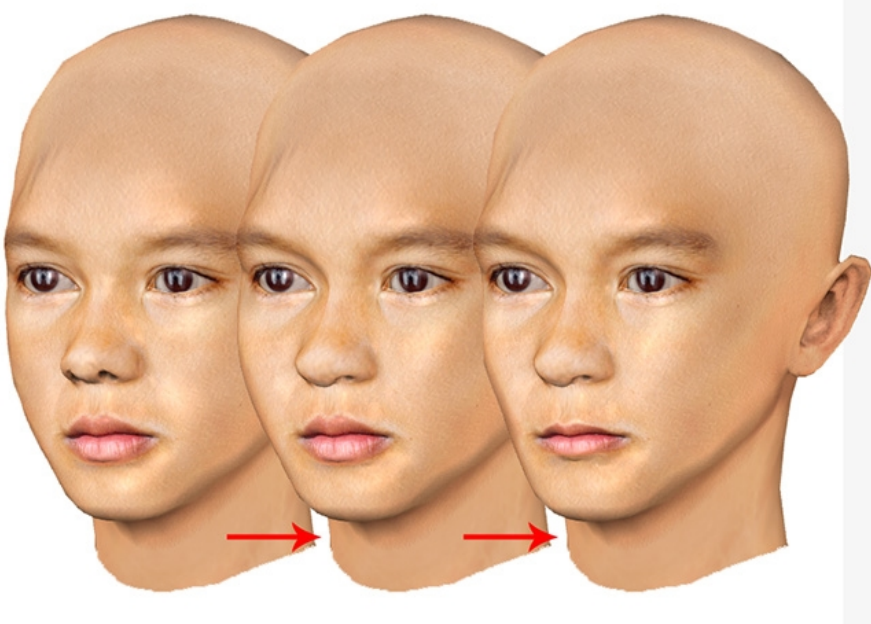


4. Drag the **Strength** slider to determine the roughness level on the face.



Fine-tuning with Detail Morph (New for Version 8)

After the 3D actor is created by the [Front Face Fitting](#) and [Side Face Fitting](#) steps, you can use the morphing sliders to fine-tune the facial feature of the head in the **Detail Morph** step. In addition to fine-tuning the facial features, you can also create an actor that looks similar to the original photo with specialized facial features.



Fine-tuning Facial Features

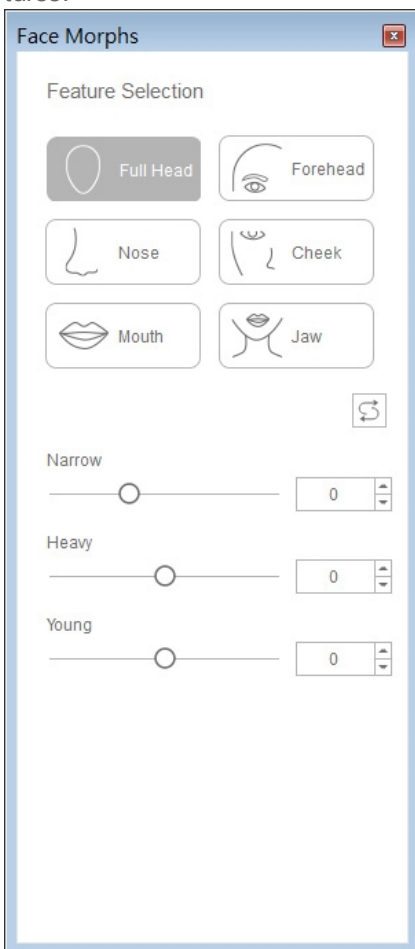
1. Make sure the [Front Face Fitting](#) and [Side Face Fitting](#) steps have been finished.



2. Click on the **Detail Morph** step on the toolbar.



3. The **Contour and Texture Alignment** panel will be changed to **Face Morphs** panel with sliders of bones and facial features.



4. Drag the sliders to fine-tune the facial features, especially the eyebrow bones, the cheek bones, the nose shape and the lips.



Eyebrow bone depth increased



Nose tip lowered



Chin width increased



Nose bridge width decreased



Cheeks sink



Cheek bones width decreased



Lip tone decreased

Note

- The morphing technology can alter the appearance of age.
- You can always switch back and forth between the [Front Face Fitting](#), [Side Face Fitting](#) and this steps in order to optimize the appearance of the 3D actor.

Wearing Hair (New for Version 8)

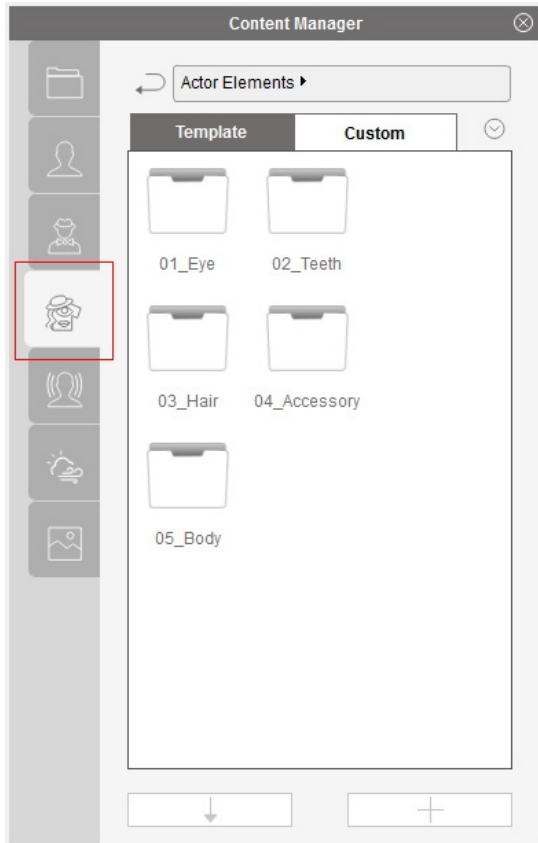
As soon as the 3D actor is created from photos, it is, by default, bald. **CrazyTalk** provides a library of hair templates that are suitable for males and females. Simply applying these templates and the actor will have various looks of hair to generate different style.



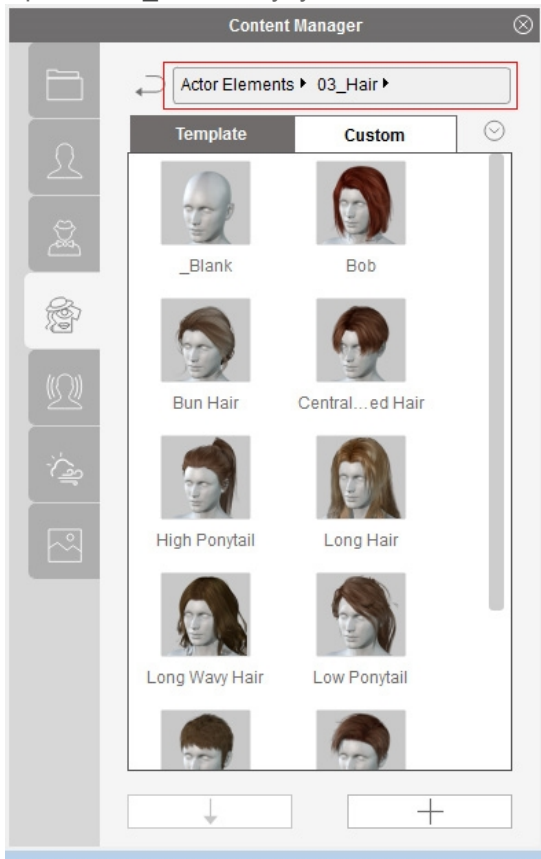
1. Generate a new actor.



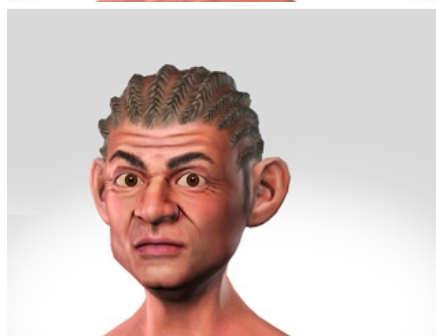
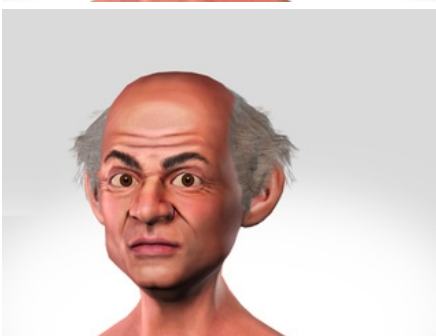
2. Open the **Content Manager** and switch to the **Actor Element** tab.



3. Open the **03_Hair** library, you will discover several hair templates.

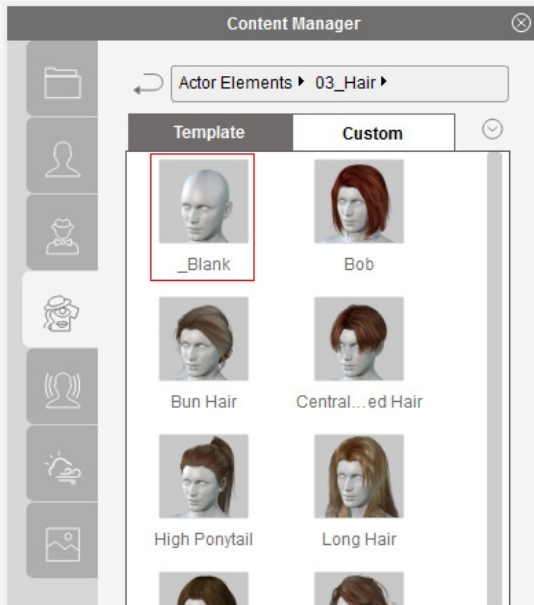


4. Apply the desired hair template by double-clicking on it.
5. The actor thus wears a hair. Different hairs can give the actor different styles.



Note

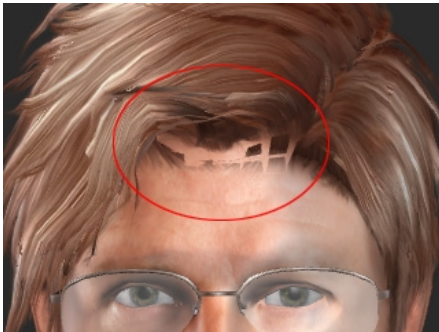
- To remove the hair, simply apply the **_Blank** template in the library.



- The hair templates in the library contain physics settings, which automatically animate the hair with wind effect. Please refer to the [Wind Settings](#) and [Simulating and Recording Hair Animations](#) sections for more information.
- You can purchase more hair templates on Reallusion Official Site.

Fixing Hair Intersection Issue

After applying a hair to a new 3D actor, you may come across intersection between the edge of the hair and the scalp as shown below:

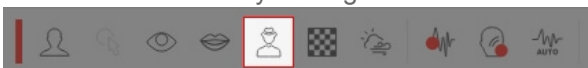


This issue gets even worse when the actor starts performing.

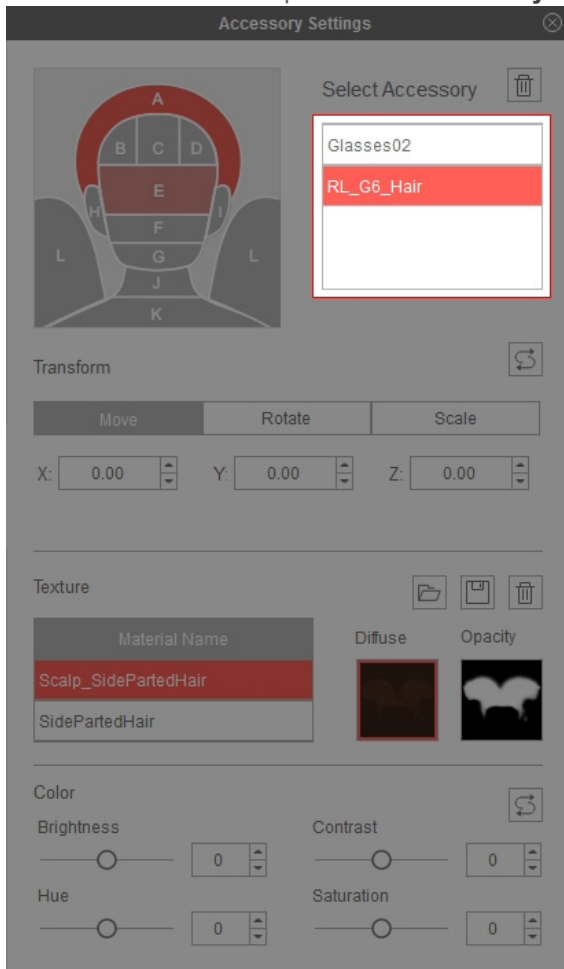


Please follow the steps below to solve the issue:

- Click on the Accessory Settings button on the toolbar.

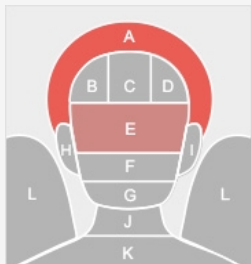


2. Select the hair in the list pane of the **Accessory Settings** panel.

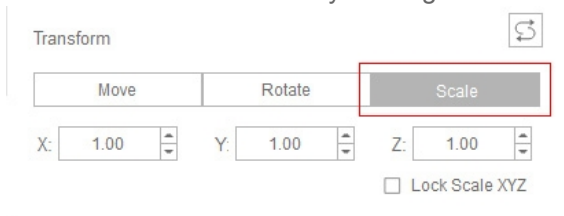


Note:

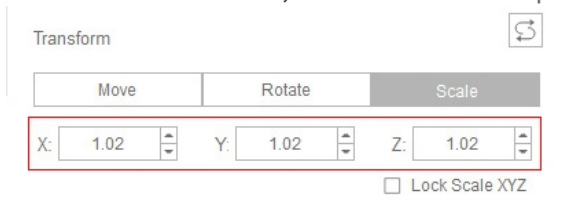
You are able to select the hair from the dummy pane by clicking on the area **A**.



3. Switch to the **Scale mode** by clicking on the button within the **Transform** group.



4. Increase the values of **X**, **Y** and **Z** until the scalp and hair no longer penetrate.



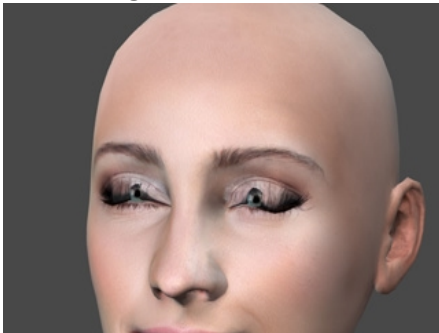


Fixing Eyes Imperfections (New for Version 8)

After applying an eye template to a new 3D actor, there may be penetration between the eyeballs and the eyelids as shown below:



This issue gets even worse when the actor blinks or closes its eyes.



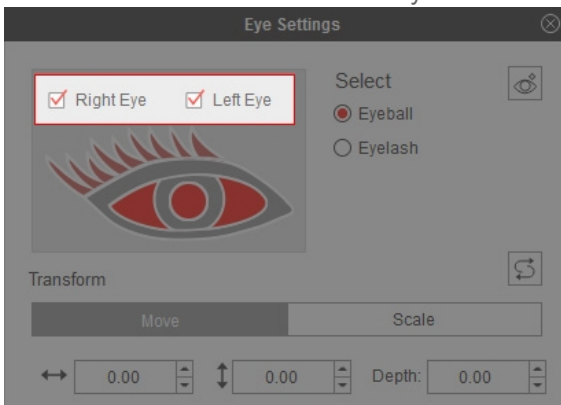
You can follow either of two methods below to solve this issue:

Transforming Eyeballs

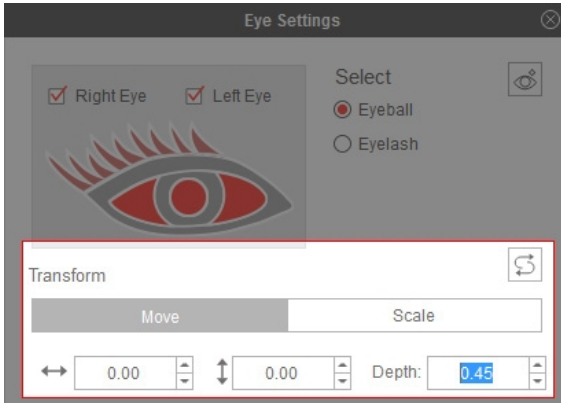
1. Click the **Eye Settings** button on the toolbar.



2. Make sure the check-boxes of the eyeballs that have the intersection issue are selected.



- Click on the **Move** tab in the **Transform** section. Adjust the **Depth** value in order to push the eyeballs back.



- The intersection issue will thus be solved. Even when the actor blinks, the eyeballs don't clip through the eyelids.



Moving Feature Points

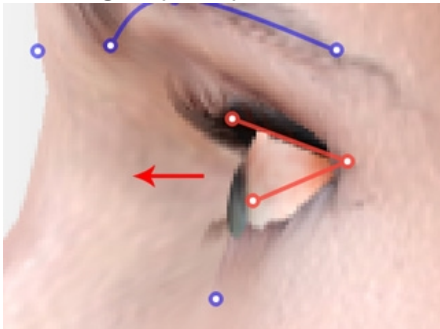
- Click on the **Head Fitting** button on the toolbar.



- Switch to the **Side Fitting** mode. You can more obviously observe the issue from the **3D Head View**.



- In the original photo pane, move the three points that determine the depth of the eyelids to the left.



The eyelids thus in front of the eyeballs.



4. Click the **Apply** button to go back to the stage to check the results.



In addition to the issues above, you may sometimes find a fold line on the upper eyelids.



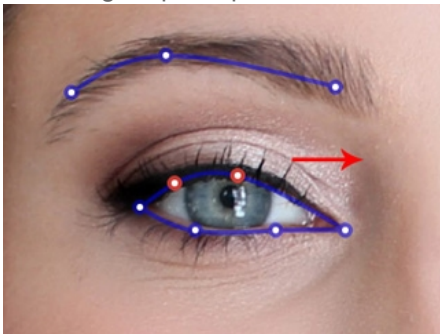
You can remove the fine lines off the eyelids by the steps below:

Removing Folds on Eyelids

1. Click on the **Head Fitting** button on the toolbar.



2. Switch to the **Front Fitting** mode >> **Eye (R)** sub-step.
3. In the original photo pane, move the two upper feature points toward the inner corner of the eye.



Make sure the distances between each feature points are averaged.



4. Follow the same steps for the other eyelid if it has a fold line as well.



5. Click the **Apply** button to go back to the stage and the fold lines are removed.



Wearing Accessories (New for Version 8)

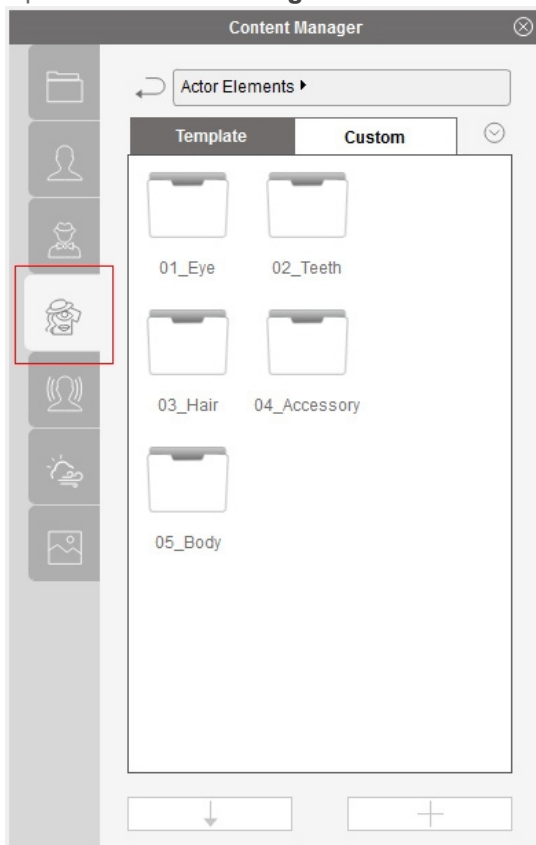
In addition to hair, you are able to put on accessories to 3D actor to create special styles for it.



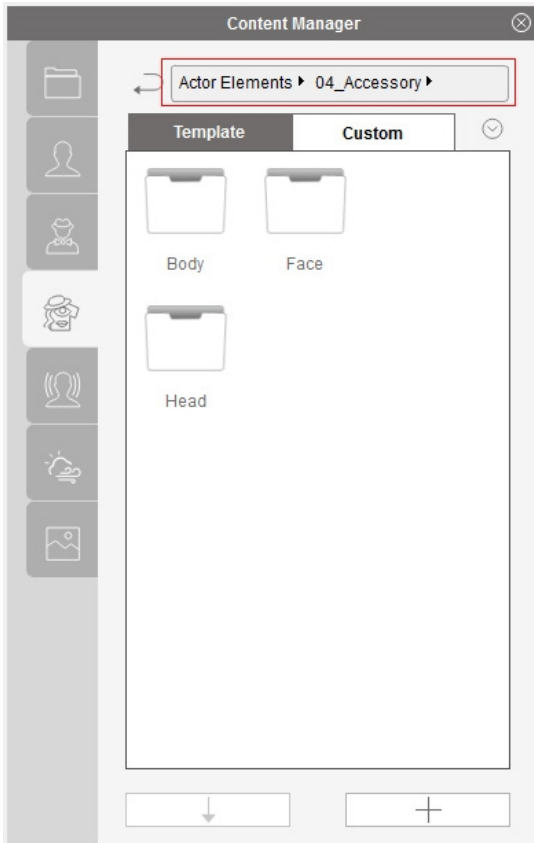
1. Generate a new actor.



2. Open the **Content Manager** and switch to the **Actor Element** tab.



3. Open the **04_Accessory** library, you will see **Body**, **Face** and **Head** sub libraries in it.



4. Open either of the sub libraries.
5. Apply the desired accessory template by double-clicking on it.
6. The actor thus wears the desired accessory.



Editing Accessories

Since the 3D actor's heads varies, the accessory might not always fit properly to the actor, besides, sometimes you might want to adjust the textures of the accessories to ideal appearances. You can further edit the accessories through the **Accessory Settings** panel. Some accessories containing hair will be auto-animated when the project is played. Please refer to the sections below for more information.

- [Editing Accessories](#)
- [Physics Effects](#)

Editing Accessories (New for Version 8)

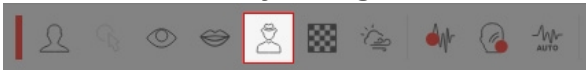
Editing Accessories includes two aspects, transforming and texture-adjusting.

- **Transforming Accessories**

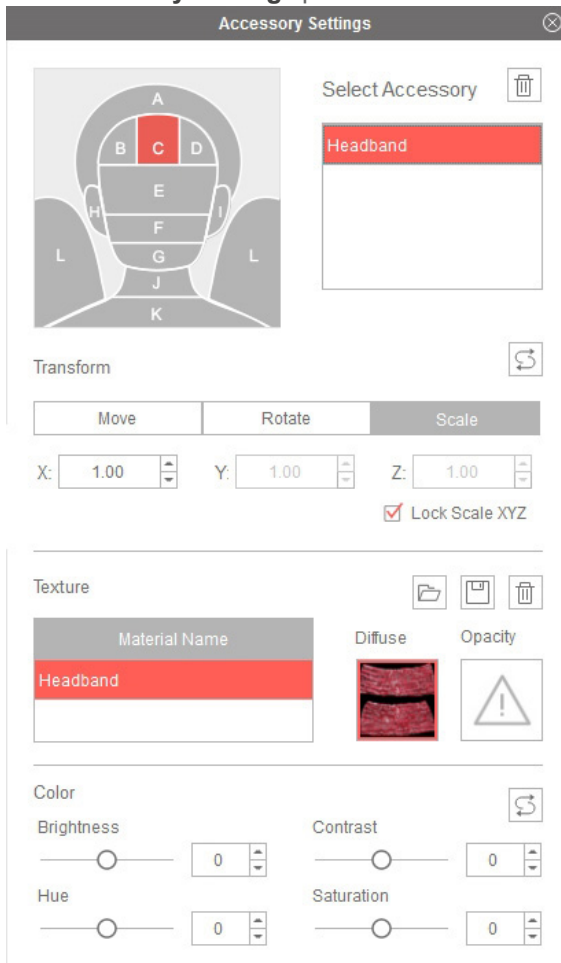
1. Wear an accessory to a 3D actor (please refer to the [Wearing Accessories](#) section for more information).



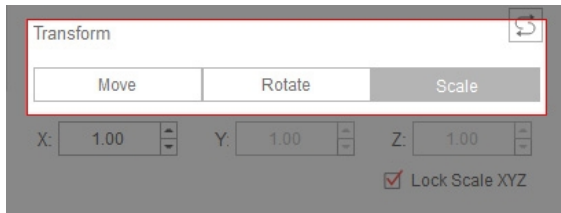
2. Click on the **Accessory Settings** button on the toolbar.



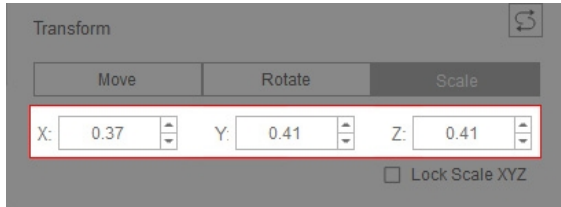
3. The **Accessory Settings** panel will show on the screen.



4. Select one of the radio buttons in accordance with the link target (in this case, only the target, top, can be chosen).
5. Determine the certain change you are about to make (transform, rotation or scale) by clicking the **Transform** buttons.

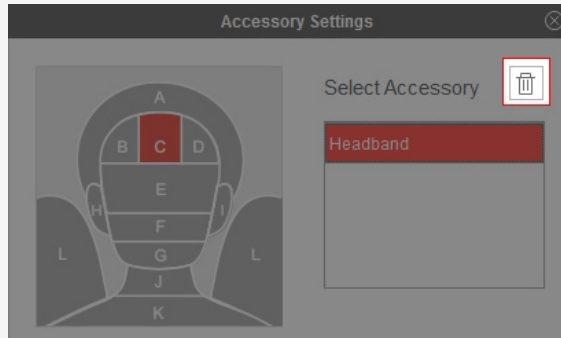


6. Set the X, Y and Z value to transform the accessory.



Note

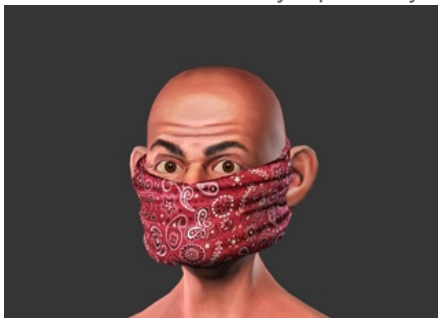
- If you want to remove the certain accessories on the actor, simply select them on the dummy pane or in the list window, and click the **Delete** button.



- Click the **Reset** button to retrieve the initial values of X, Y and Z.

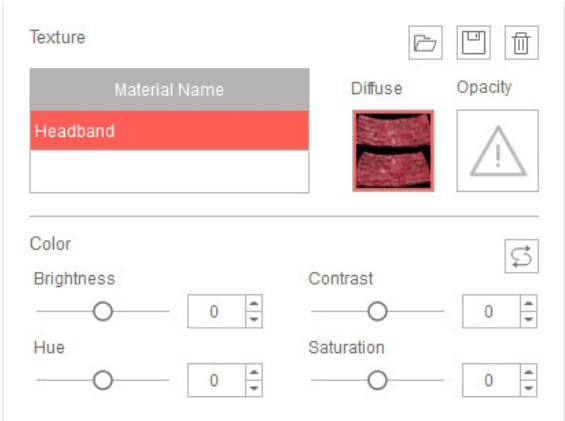


7. Transform the accessory repetitively until you are satisfied with the result.



- **Accessories Texture-editing**

The lower half of the **Accessory** ppanel is dealing with the texture-editing of the accessories. However, the usage is the same as the **Texture Setting** panel. Please refer to the [Modifying Textures of 3D Actor](#) section for more information.



Modifying Textures of 3D Actor (New for Version 8)

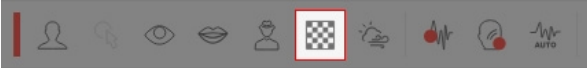
The textures of a 3D actor, including the hair, or cloth can be customized by further editing. The editing method includes basic color adjustments and advanced editing for texture images.

Basic Color Adjustments

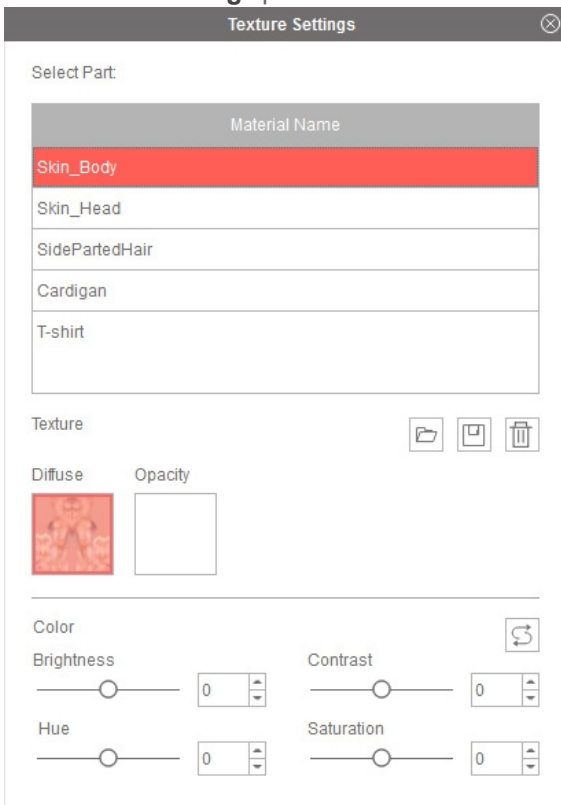
1. Create a 3D actor, add hair and cloth to it. (please refer to the [Wearing Hair](#) and [Wearing Accessories](#) sections for more information).



2. Click on the **Texture Setting** button on the toolbar.



3. The **Texture Settings** panel will show on the screen.



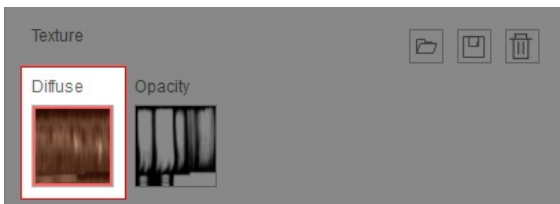
- In the **Material Name** list you can find the materials that are applied to the actor's head, body, hair and cloth.
- The materials for the accessories, teeth, tongue, eyeballs can be edited in their corresponding panels; meanwhile, the usage of editing the textures of accessories are the same as the methods described in this page.

4. Select one of the materials whose colors you desired to adjust (in this case, the **hair**).

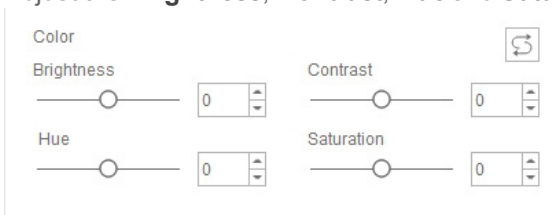
Select Part:

Material Name
Skin_Body
Skin_Head
SidePartedHair
Cardigan
T-shirt

5. Select the **Diffuse** channel.



- **Diffuse:** The texture image that is mapped onto the object.
 - **Opacity:** The texture image that is used to show, hide, cut or trim the object.
 - The advanced usage these two channels are describe in the latter sections of this page.
6. Adjust the **Brightness**, **Contrast**, **Hue** and **Saturation** sliders to edit the color of the texture.



- You can click the **Reset** button to retrieve the original settings of these four sliders.
7. Adjust repetitively until you are satisfied with the result.



Advanced Editing for Texture Images

The advanced editing method for the texture images involves retouching texture images with external image editor (e.g. Adobe Photoshop).

Usage of Diffuse

1. Prepare a 3D actor.



2. Click on the **Texture Setting** button on the toolbar.

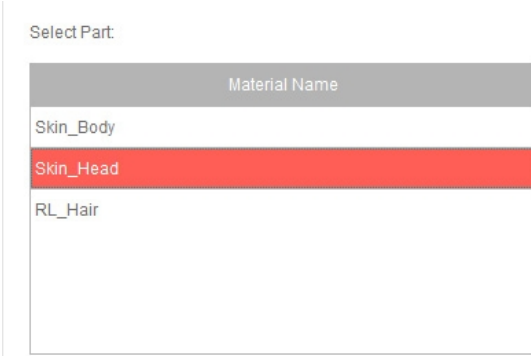


3. The **Texture Settings** panel will show on the screen.

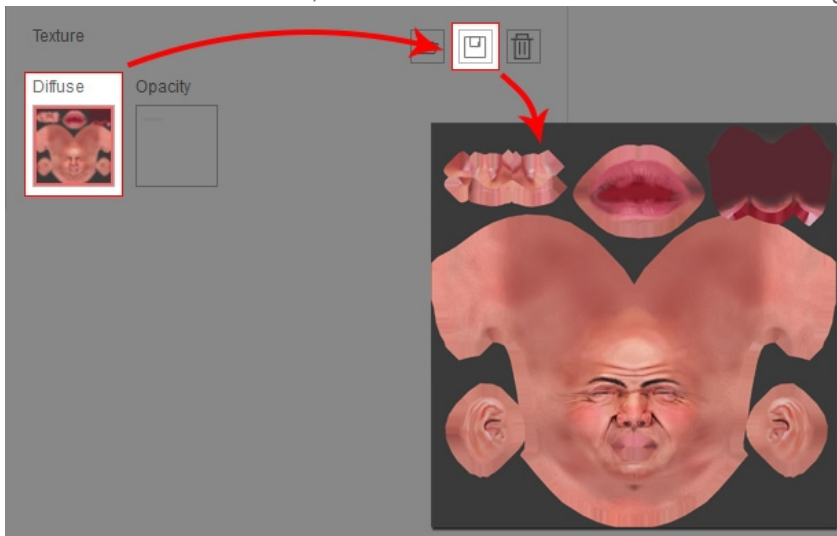


- In the **Material Name** list, you can find the materials that are applied to the actor's head, body, hair and cloth.
- The materials for the accessories, teeth, tongue, eyeballs can be edited in their corresponding panels; meanwhile, the usage of editing the textures of accessories are the same as the methods described in this page.

4. Select one of the materials whose texture image you want to adjust (in this case, the **Skin_Head**).



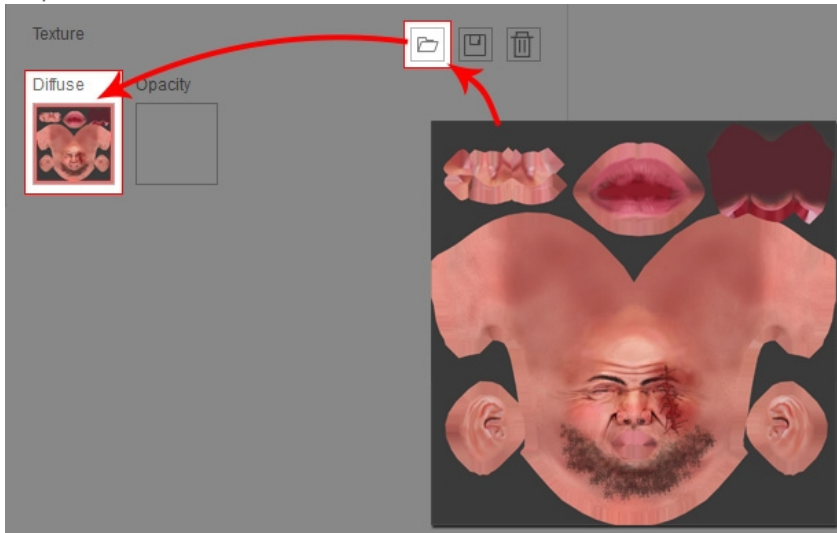
5. Select the **Diffuse** channel, click the Save button to save the texture image as an image file.



6. Edit the image in your favorite image editor (in this case, Adobe Photoshop). Save to keep the editing result.



- Go back to **CrazyTalk**, in the **Texture Settings** panel, click the **Load** button to load the saved image in the previous step.



- The image in the **Diffuse** channel will be replaced by the edited image.



Note

Please also refer to the [Dumping Textures of 3D Actor for Further Editing](#) for more information about editing original textures of a 3D actor.

Usage of Opacity

The **Opacity** channel is used to load a grayscale image to mask off specific areas of the object. The areas on the object maps to the black in the image will be cut off while white will be kept. The areas maps to the gray area will be semi-transparent in accordance with the level of the gray.

It is very useful when you want to create an actor with only a head for dramatic animation effect.

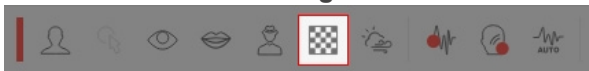
- Prepare a 3D actor, transform it if necessary.



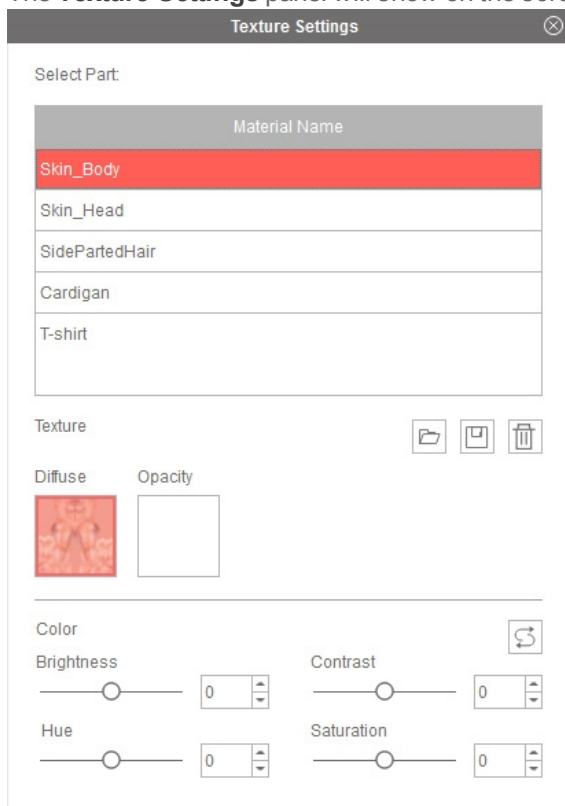
2. Add a custom background.



3. Click on the **Texture Setting** button on the toolbar.



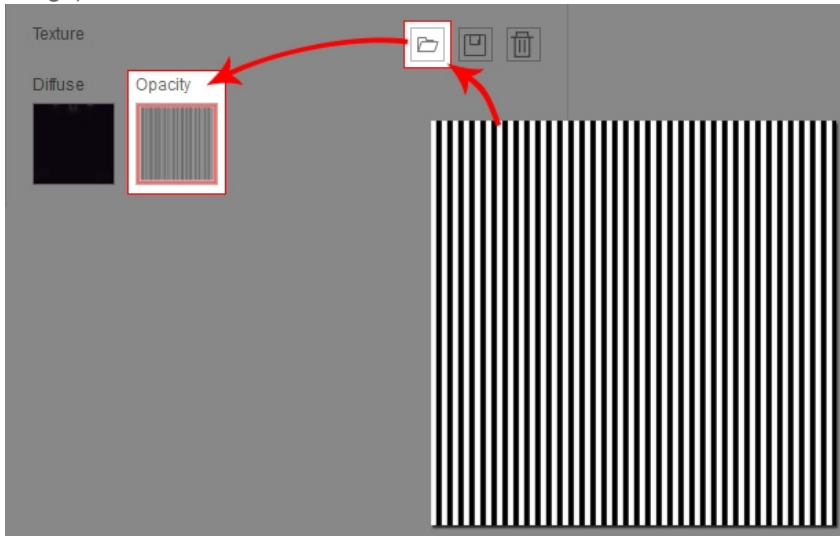
4. The **Texture Settings** panel will show on the screen.



- In the **Material Name** list, you can find the materials that are applied to the actor's head, body, hair and cloth.
 - The materials for the accessories, teeth, tongue, eyeballs can be edited in their corresponding panels; meanwhile, the usage of editing the textures of accessories are the same as the methods described in this page.
5. Select one of the materials of the object you want to trim (in this case, the **Skin_Body**).



6. Select the **Opacity** channel, click the **Load** button to load a prepared image (in this case, a black-and-white striped image)



7. The texture will mask off the actor's body in stripes.



8. In order to cut off the entire body and cloth, you need to load an image with solid black color in the same manner.



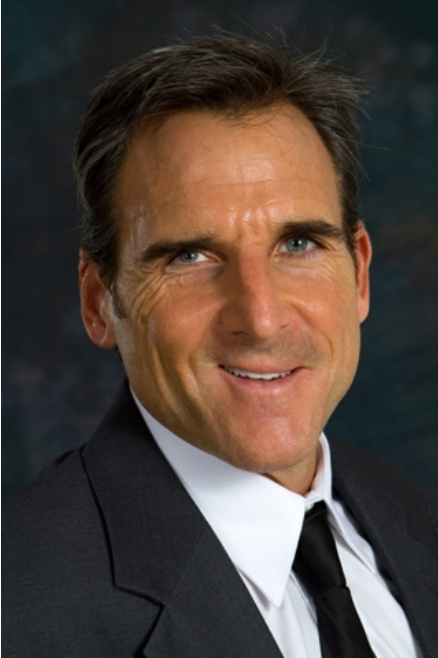
Dumping and Reloading Textures for Further Editing (New for Version 8)

CrazyTalk provides a hidden feature for you to dump the textures during the [Creating 3D Actor](#) procedure and on the stage.

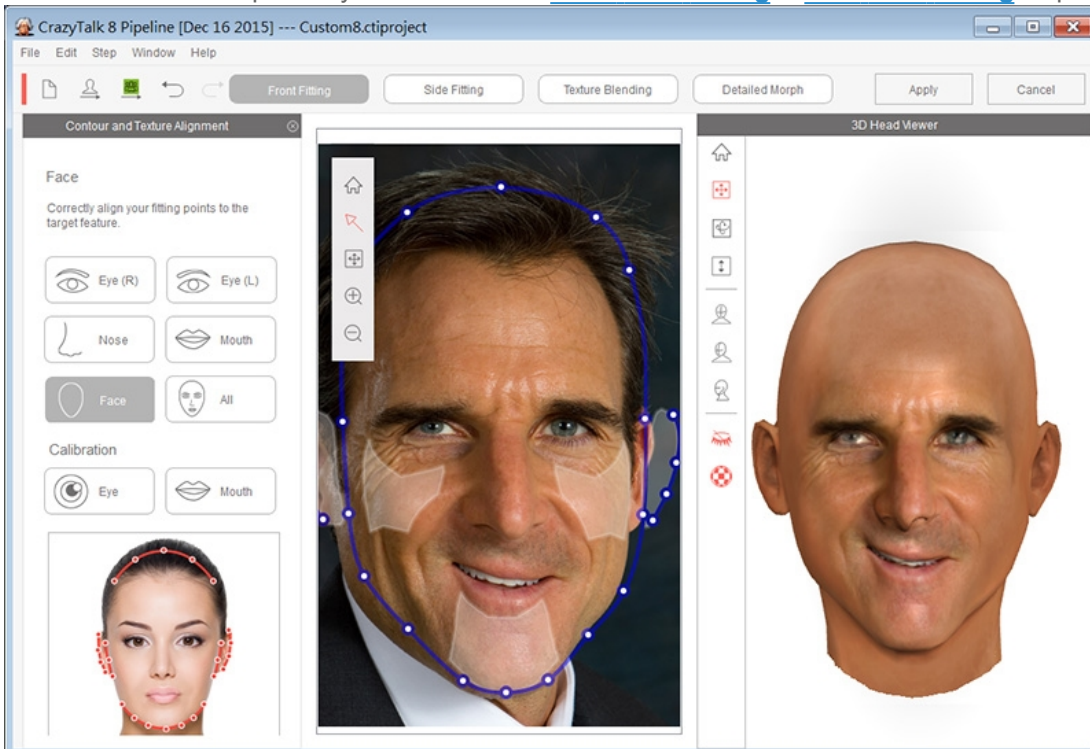
Dumping Front and Side Photos in Creating 3D Actor Procedure

In the [Creating 3D Actor](#) procedure, you are able to dump the front and side textures once you find any flaws on the faces and you want to retouch it, such as opened mouth, rotated head, or uneven-sized eyes.

1. Prepare a front photo (side one is optional).



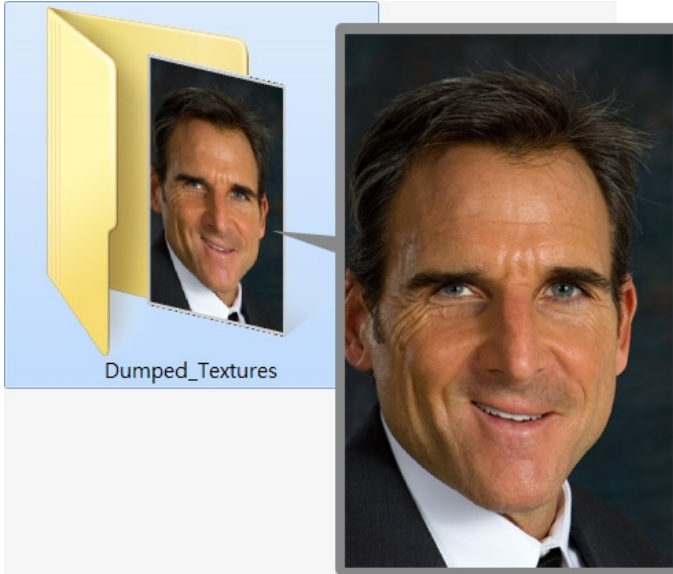
2. Follow the classic steps until you encounter the [Front Face Fitting](#) or [Side Face Fitting](#) steps.



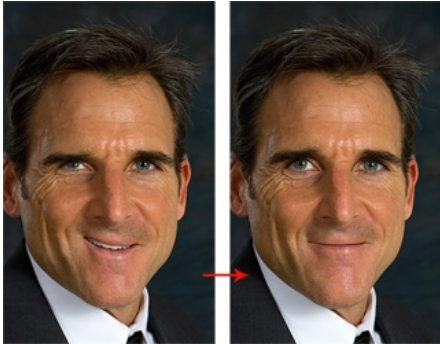
You may find the mouth of the front face is slant and opened, and the sizes of the eyes are different.

3. Press the combination keys, **Shift + T**.

4. Select a target folder for dumping the original photos of the actor.



5. Edit the texture with flaws in your favorite image editor and save the changes.

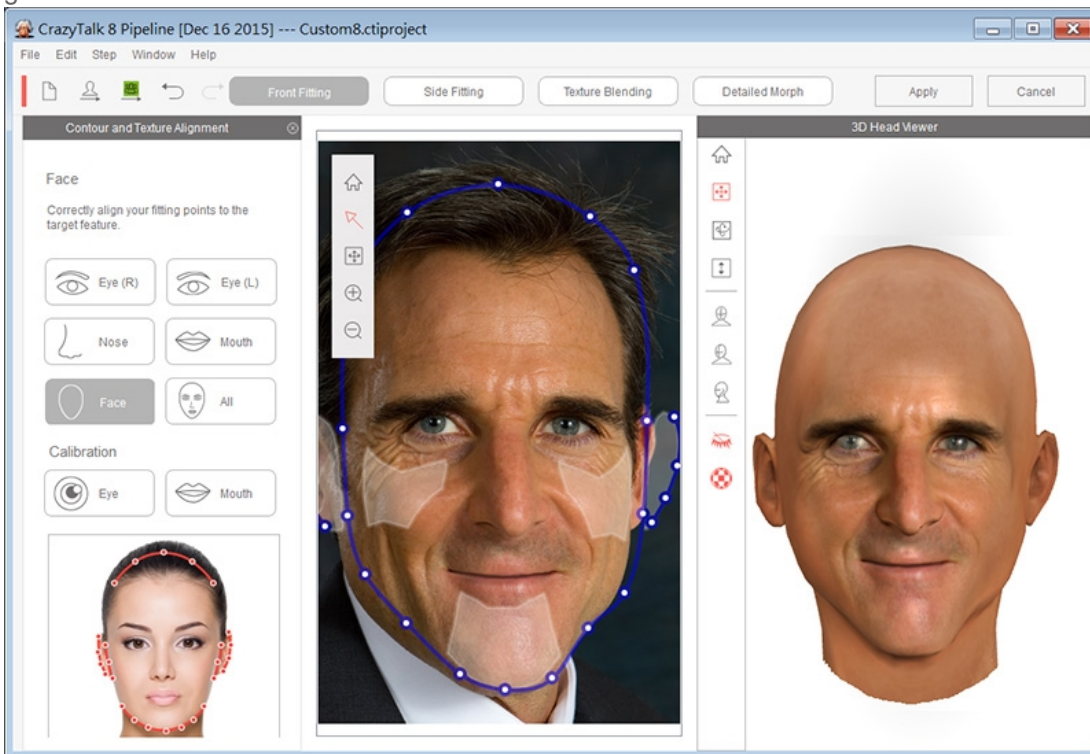


Note

Please do not change the file names and the resolutions of the photos in the folders.

6. Go back to **CrazyTalk** and press down the combination keys, **Shift + T** again.

7. Select the same folder again to replace the original photo with the modified ones; while the feature points are left unchanged.



Dumping Textures on Stage

On the stage, in addition to the **Texture Setting** panel for [Modifying Textures of 3D Actor](#), there are still some other textures scattered in different panels (including **Texture Setting**, **Eye Setting**, **Teeth Setting** and **Accessory** panels).

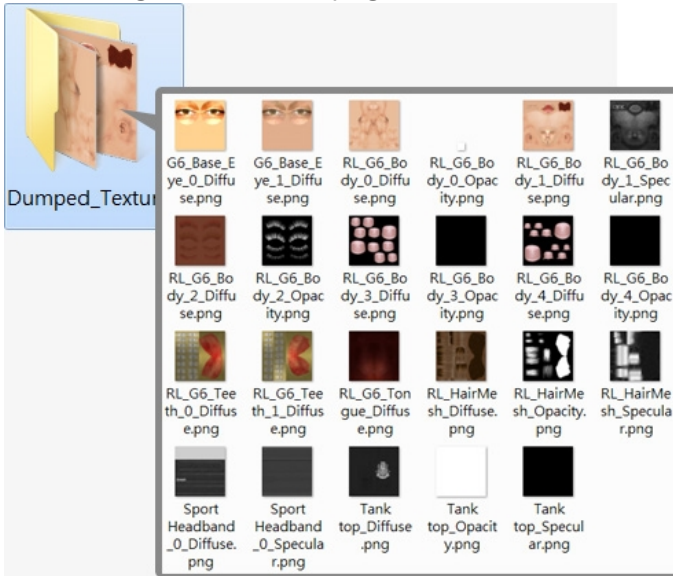
With the texture-dumping feature, you can dump each and every texture of a 3D actor for further editing without having to find and edit them from different panels.

1. Create a project.



2. Press the combination keys, **Shift + T**.

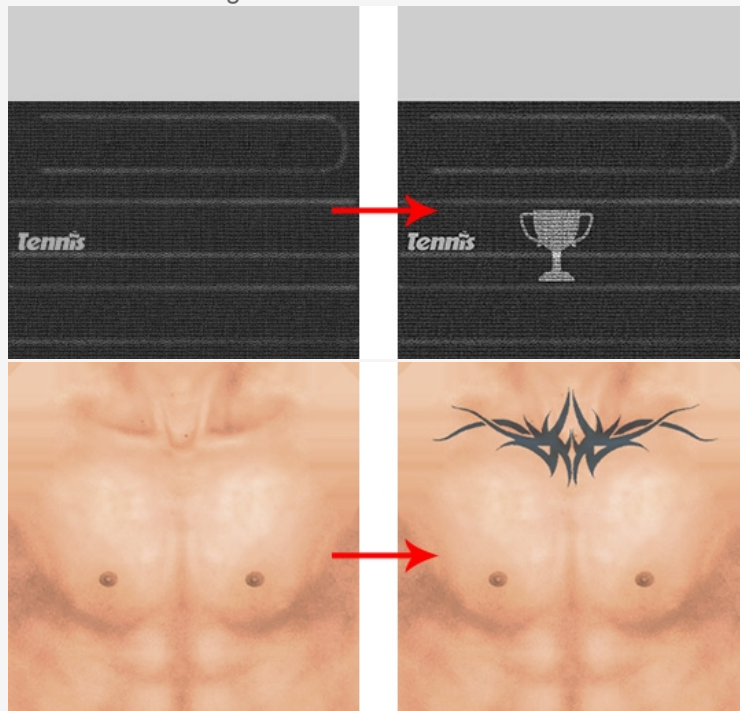
3. Select a target folder for dumping the textures of the actor.



4. Edit the textures with your favorite image editor and save the changes (in this case, the **Headband** and **Body** diffuse textures).

Note

Please do not change the file names nor the resolution of the files in this folder.



5. Go back to **CrazyTalk** and press down the combination keys, **Shift + T**, again.
6. Select the same folder to load these texture back.

7. The actor's textures will be updated.



CHAPTER 5

Atmosphere Settings for 3D Actor (New for Version 8)

In **CrazyTalk**, the atmosphere is composed of lighting, background images, winds and physics effects. These effects increase the options and realism for the scene.

Note

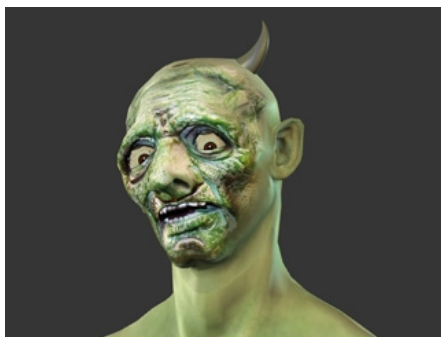
Please note that the atmosphere only applies to 3D actor.

- [Changing Atmosphere](#)
- [Background Image Settings](#)

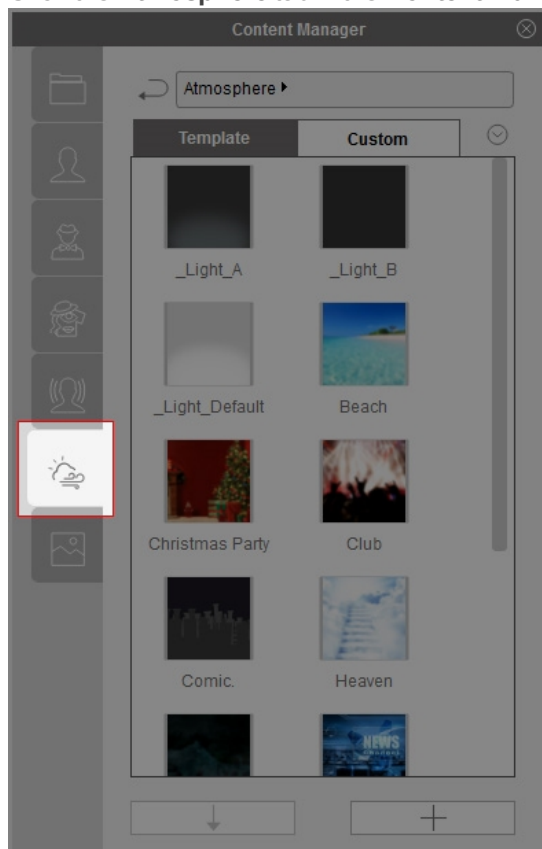
Changing Atmosphere

CrazyTalk provides an atmosphere library in which many embedded templates are prepared for different scenarios.

1. Create a 3D actor.



2. Click the **Atmosphere** tab in the **Content Manger**.



3. Apply one of the templates that is suitable for your actor (in this case, the **Horror**).



Editing Atmosphere

Each applied atmosphere can be further adjusted, including the light, the background image, the wind and the physics settings; you can open the **Atmosphere Settings** panel and do the modification.

- **Adjusting Lighting**

The adjustable setting for the lighting of each applied atmosphere is the strength of the lights. By adjusting the strength, the atmosphere can be changed into more dramatic effects. In the following steps, the previous project is taken as an example.

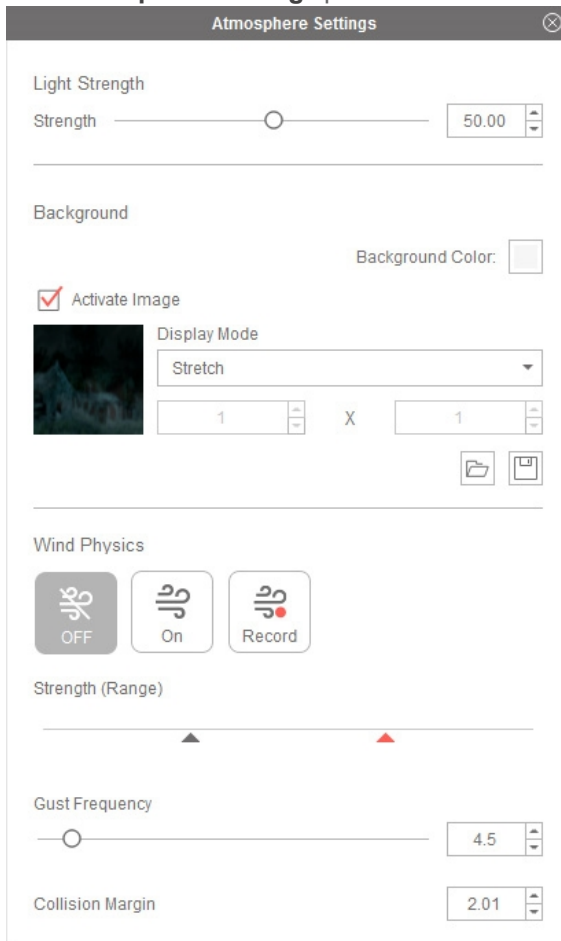
1. Apply an atmosphere template to the current project.



2. Click the **Atmosphere** button on the toolbar.



3. The **Atmosphere Settings** panel will show.



4. In the **Atmosphere Settings** panel, drag the **Lighting Strength** slider to define the strength of the light or lights in the environment.



Lighting Strength = 0



Lighting Strength = 100

- **Changing Background Image**
Please refer to the [Background Image Settings](#) section for more information.
- **Physics Settings**
Please refer to the [Physics Effects](#) section for more information.

Background Image Settings

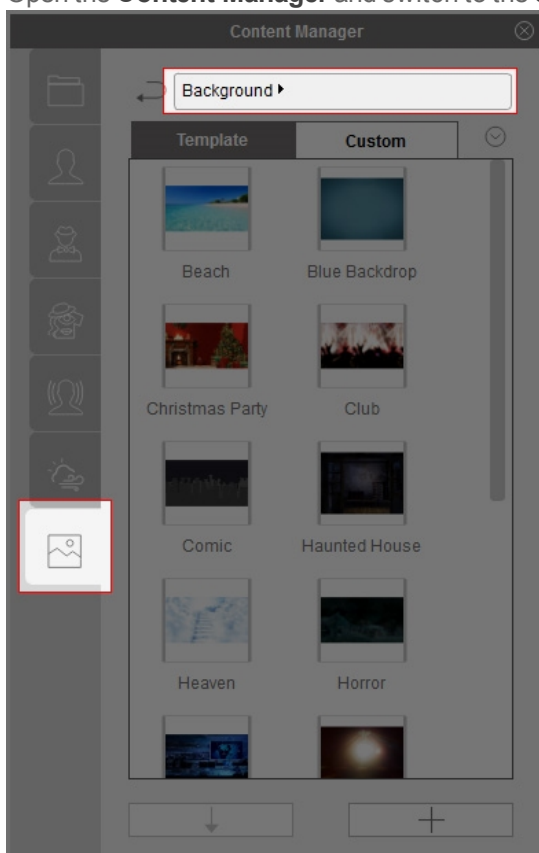
In addition to [Changing Atmosphere](#) in a project, you are able to change the background image freely.

Applying Background Image From Library

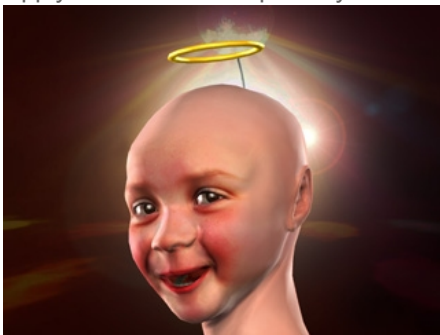
1. Create a new project.



2. Open the **Content Manager** and switch to the **Scene** tab >> **Background** library.



3. Apply either of the template by double-clicking on the desired one (in this case, the **Night Club**).



Loading Background Image

You are also able to load a custom background image.

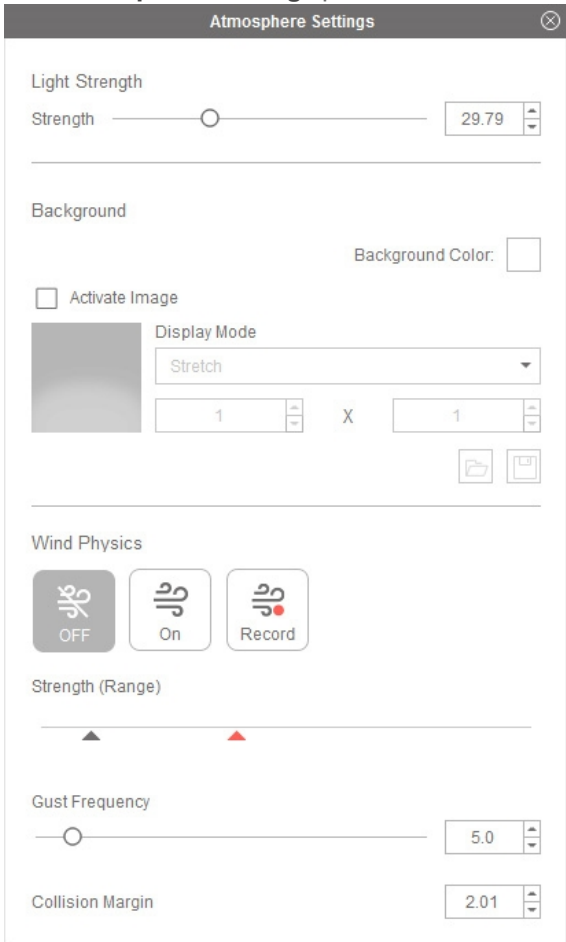
1. Create a new project.



2. Click the **Atmosphere** button on the toolbar.



3. The **Atmosphere Settings** panel will show.



4. Activate the **Activate Image** box. The background image will be the default one as shown below.



5. Double click on the image thumbnail to open the browser for searching and loading your favorite image.
6. Click the **OK** button to load the desired image as the background.



Note

Whenever there is a background image, you are able to change the display modes in order to have different styles of the background.



Prepared Image



Stretch: The image will always be stretched to fit the view port regardless of its resolution.



Tile (2 X 2)



Fit: The image will always fit into the view port in its original resolution.

Physics Effects (New for Version 8)

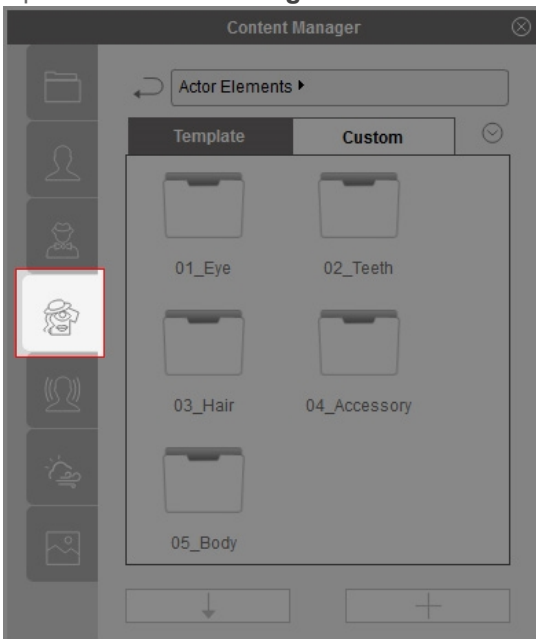
The physics effects in **CrazyTalk** include **Spring** and **Wind** effects. The **Spring** effects mostly happen on accessories while the **Wind** on hair. These effects can increase the realism when the 3D actor is performing.

Apply Hair and Accessory with Physics Settings

1. Create a new project.



2. Open the **Content Manager** and switch to the **Actor Element** tab.



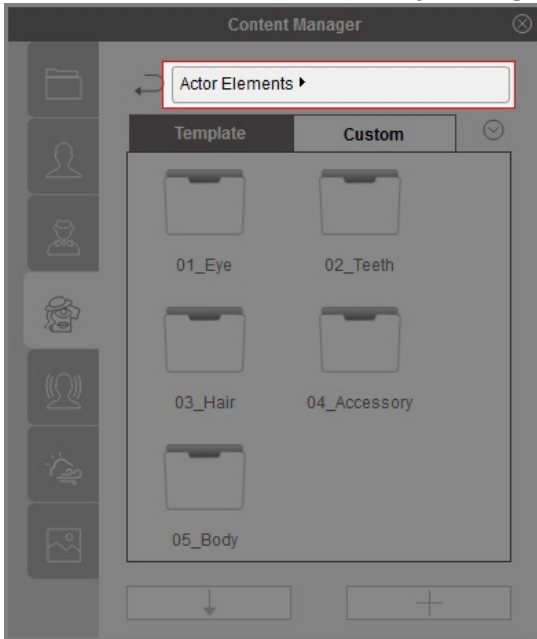
3. Access the 03_Hair library.
4. Apply the desired hair template.



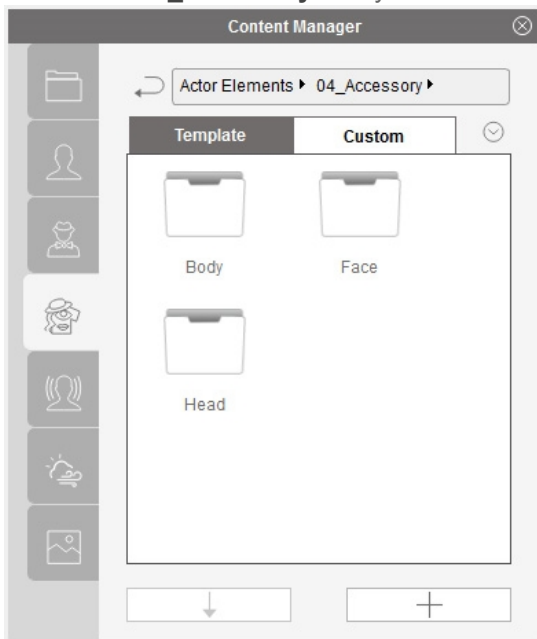
Note

- Please refer to the [Wearing Hair](#) section for more information about applying hair from library.
- Also, refer to the [Editing Accessories](#) section for modifying the texture of the hair.

5. Go back to the **Actor Element** tab by clicking the **Actor Element** button.



6. Access the **04_Accessory** library.



7. Apply either one of the accessories that are hanging, not fixed or made of clothes from these sub-libraries (in this case, the **Wig_C** in the **Head** sub-library).



8. Have the actor talk and move. The hair and the accessory will be auto-animated.



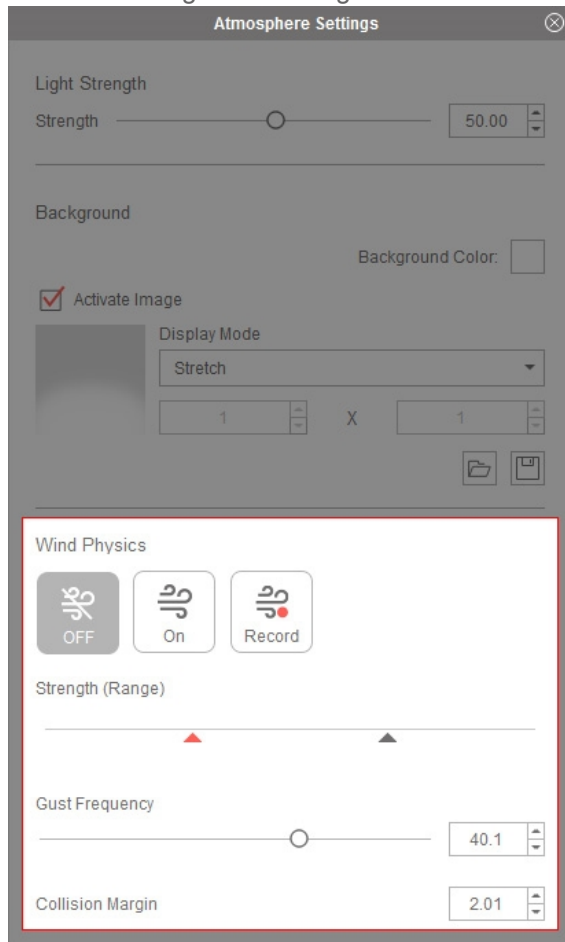
Note

The accessory with spring setting will always take effect when you play the project. However, since the hair with wind effect consumes more system resources, you can determine to turn it on or off; besides, the strength of the wind can also be adjusted as desired. Please refer to the sections below for more information:

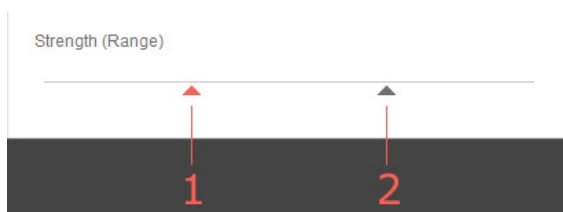
- [Wind Settings](#)
- [Simulating and Recording Hair Animations](#)

Wind Settings (New for Version 8)

In **CrazyTalk**, the strength of the wind effect and the gust frequency can be adjusted through the **Atmosphere Settings** panel, and the meaning of the settings are as described in this section below.



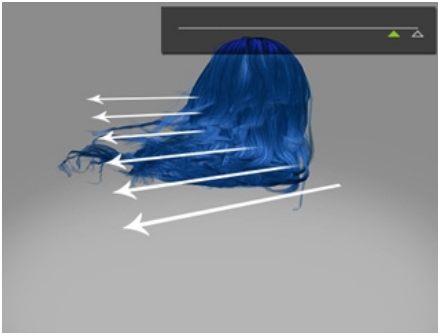
- **Strength (Range)** - The **Strength** of the wind for the soft cloth is a range; each gust of wind is generated at a random strength within the range defined by these two sliders.



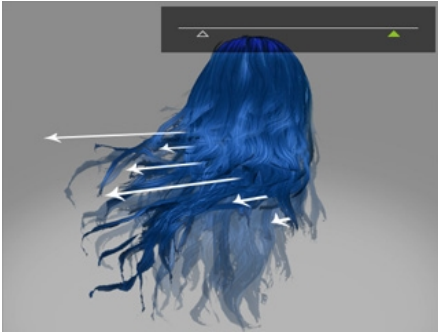
1. **General Strength:** This triangle determines the maximum strength of the basic wind forces. This level also dictates the idle performance of the hair.
2. **Gust Strength:** This triangle determines the maximum strength of wind gusts.



The strength range falls at the weak side (left end) of the slider to generate breeze.



The strength range falls at the strong side (right end) of the slider to generate strong wind.

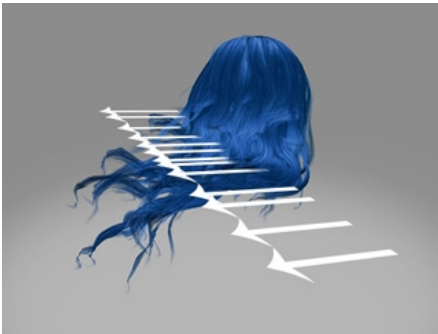


The strength range spans the weak and strong sides (left to right ends) of the slider to generate intermittent gusts of wind.

- **Gust Frequency** - The value of the **Gust Frequency** determines the number of occurrences of wind gusts in a certain period of time. A higher value dictates that gusts of wind will happen more often and vice versa.



Gust Frequency = 1.0



Gust Frequency = 50.0

Simulating and Recording Hair Animations (New for Version 8)

The hair animation is automatically generated by **CrazyTalk**; however, it consumes a lot of system resources to calculate the animation for each piece of the hair. By simulating and recording in different phases, you can ease the loading of the system and optimize the performance of your **CrazyTalk** for further editing.

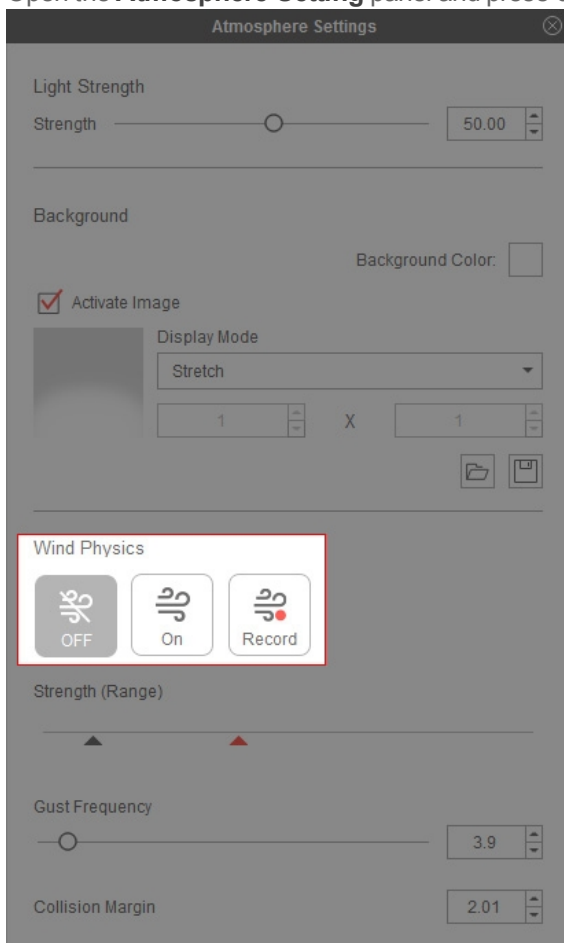
1. Create a project and have the actor put on a hair template.



2. Show the **FPS** (frame per second) on the viewport (shortcut: **Ctrl + F**).

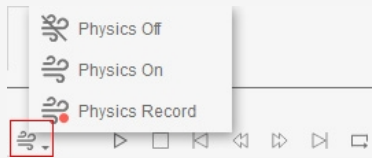


3. Open the **Atmosphere Setting** panel and press down the **Off** button in the **Physics States** section.



Note

These three buttons can also be toggled by using the drop-down list button on the play bar.



Physics On - This mode simply simulates the flowing of the hair without keeping the results. Therefore, the animation of the hair is different for each playback.

Physics Record - This mode simultaneously simulates and records the animation of the hair, it is also known as **baking animation**. You can still have the hair animation even though the physics effect is turned off afterward.

4. Playback the project.



Notice that there is no wind effect and the **FPS** is around 50.

5. Press down the **On** button in the **Physics States** section and play back again.



Notice that although the hair starts to animate, the **FPS** decreases to around 28.

6. In order to have higher **FPS** value with hair flying effect, please press down the **Record** button in the **Physics States** button and play again (**CrazyTalk** simulates and records the animation of the hair at this step).
7. Press down the **Off** button in the **Physics States** again and play back in order to ensure a higher **FPS**.



The hair performs the recorded flying animation, while the **FPS** remains acceptable.

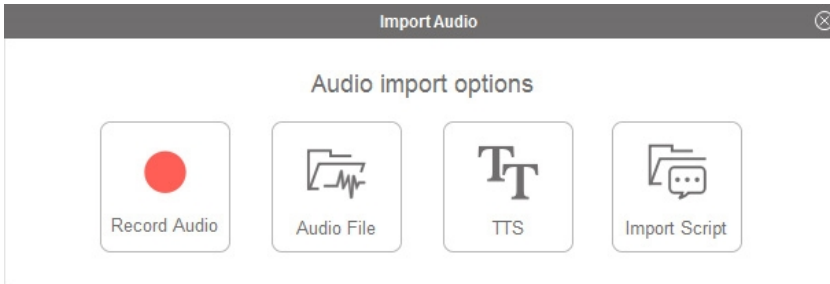
CHAPTER 6

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.

Adding Voice 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:

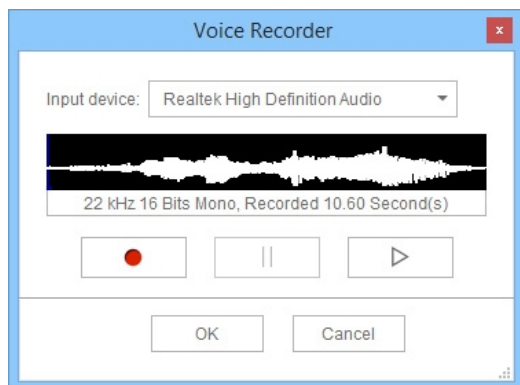
After the voice is generated, you will then be asked to determine the loading mode in order to generate an [Idle Motion](#) or an [Auto Motion](#) for the actor.

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. Click the **Record** button to start recording. Recording from the specified input device will then start.
3. Click the **Stop** button to stop recording sound.
4. Click the **Play** button to play back the recording.
5. 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.

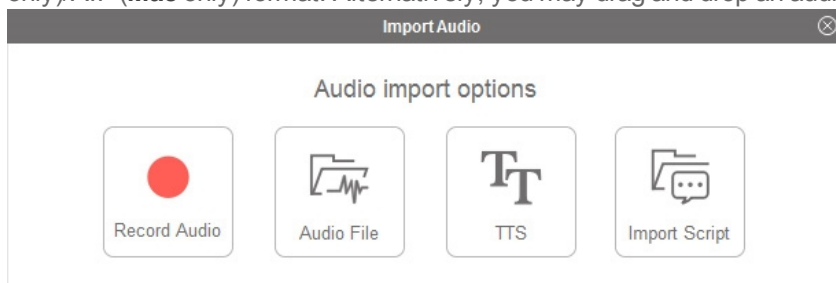
Importing WAV/MP3/M4A/AIF Files

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.



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:

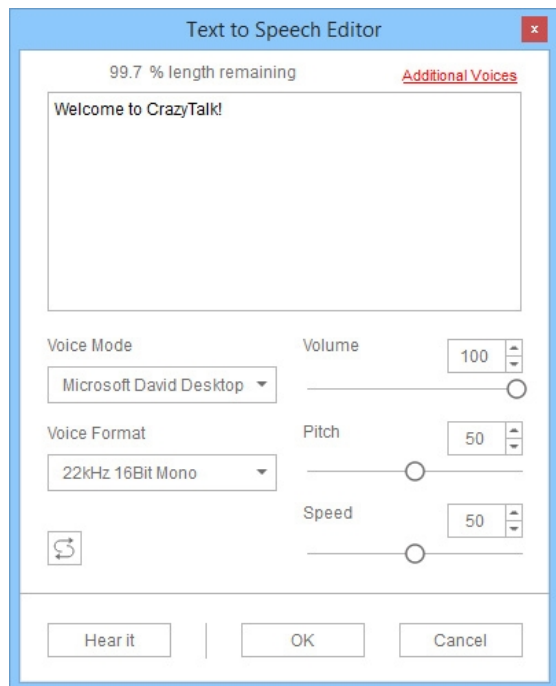
The maximum length of an imported audio file is 15 minutes.

Converting Text to Speech

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:

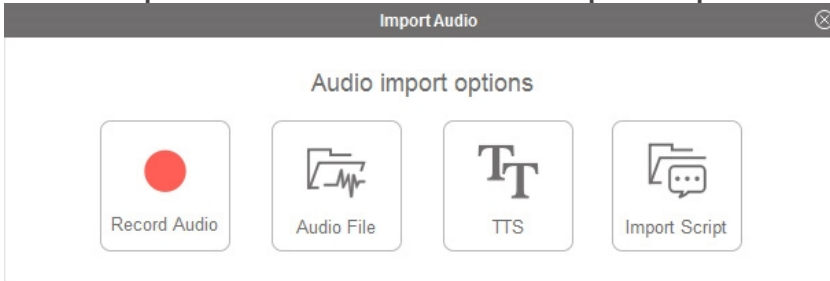
1. Type the text in the editor window. Alternatively, you may also copy and paste text from any word processing program.
2. Select the type of voice to be used by the actor by choosing in the **Voice Mode** drop-down list. Various voices for both sexes, with different settings, are available.
3. Adjust 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 (ctiScript, 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**.



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

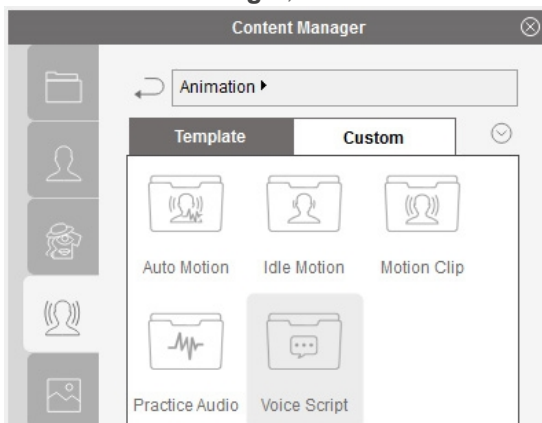
Note:

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

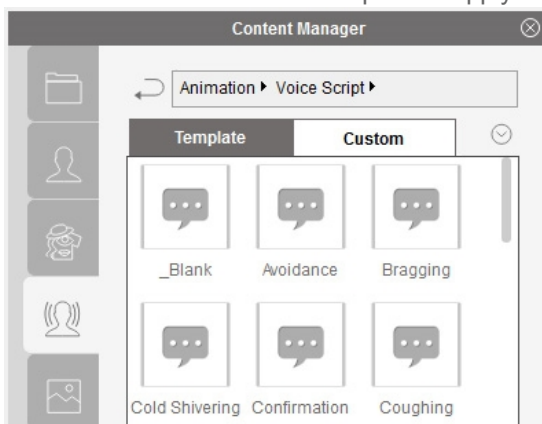
Applying Voice Scripts

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

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

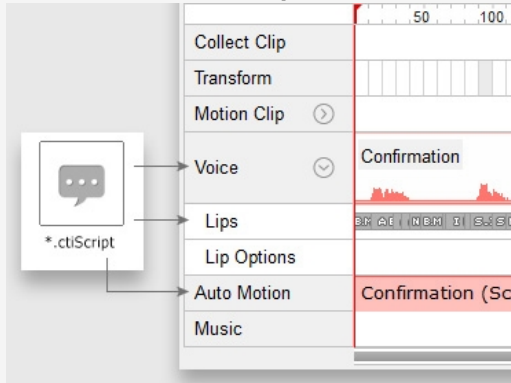


2. Double click on the desired template to apply the voice script.

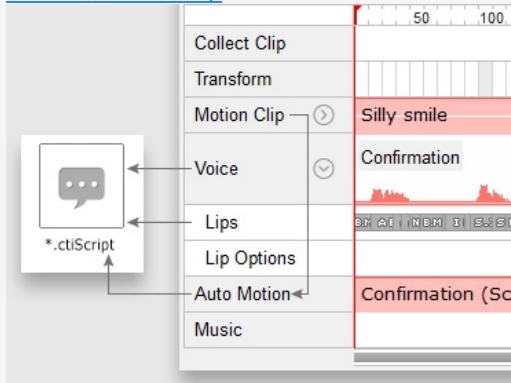


Note:

- A *.ctiScript file contains actor's voice, lip shapes and auto motion. When you apply the template of a script, the data in the **Voice**, **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 7

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](#)

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.

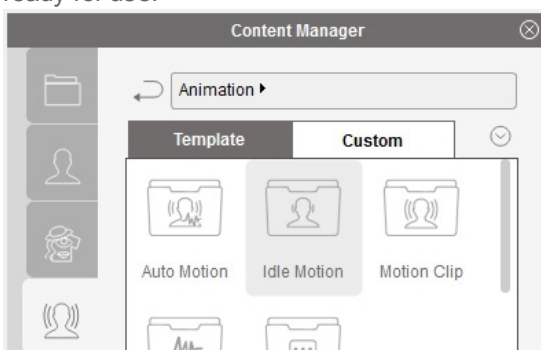
Using Idle Motion from Library

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.

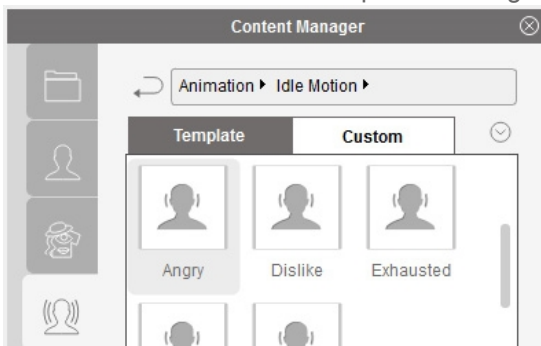
1. Create a new actor or apply an actor from the library.



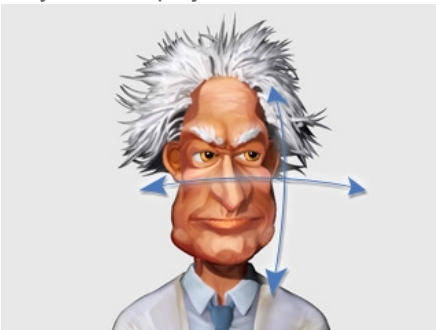
2. In the **Content Manager**, switch to the **Animation** tab >> **Idle Motion** library. There are many templates of idle motion ready for use.



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.

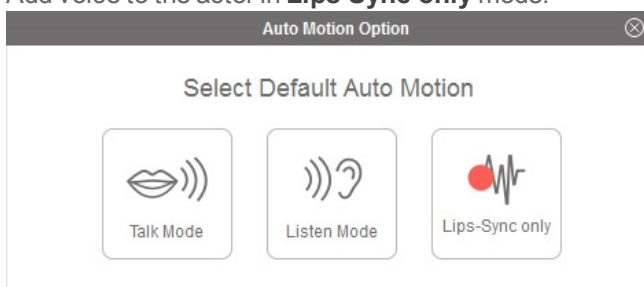
Lips-Sync with Idle Motion

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 the idle motion instead of the auto motion, then you can apply voice in **Lips-Sync only** mode.

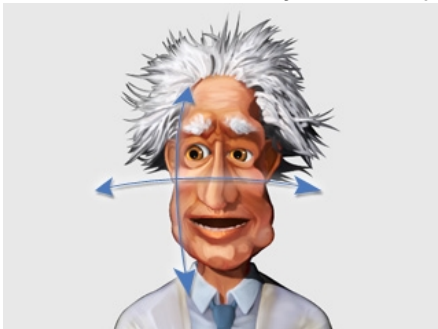
1. Create a new actor or apply an actor from the library.



2. Add voice to the actor in **Lips-Sync only** mode.



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



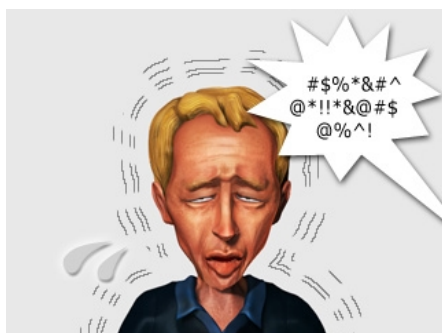
Actor talks with default idle motion.

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.

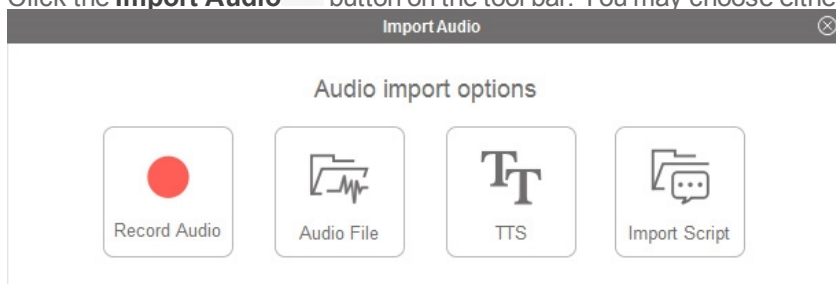


On the contrary, the actor listens and passively reacts to the context of the voice when it is in **Listen** mode.

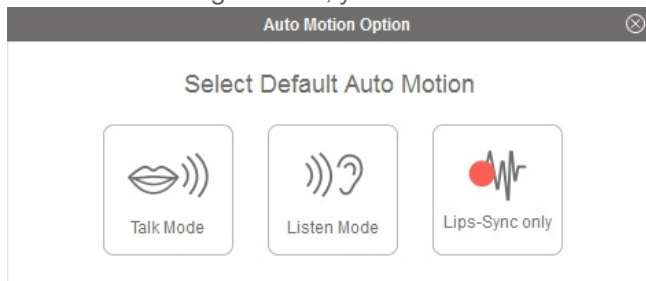


Generating Auto Motion

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.



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



- **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.
- **Lips-Sync only:** The actor utters with only mouth shapes and [idle motions](#).

- 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

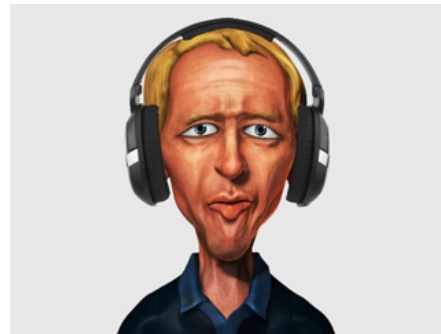
CrazyTalk introduces a major feature - **Auto Motions**, which are the biggest breakthrough in generating animations from your own voice strength; with all sorts of animation styles, you can save a lot of time while increasing the realism of your actor's motions. **Auto Motions** are basically motion 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

- [Create a new actor](#) or apply an actor from the library.

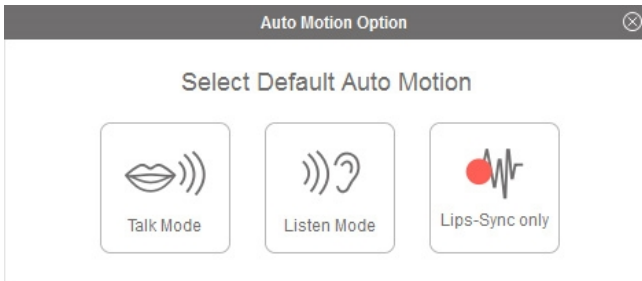


An actor ready to talk

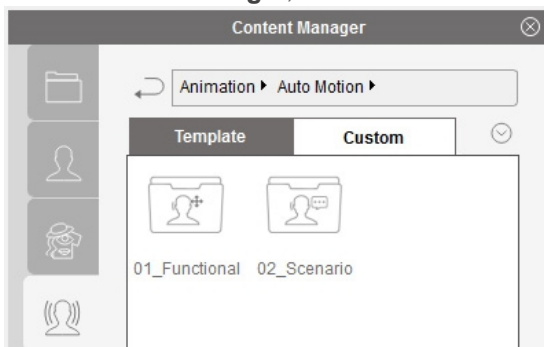


An actor ready to listen

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



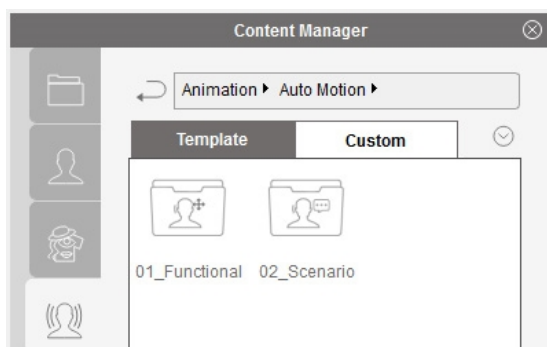
- In the **Content Manager**, switch to the **Animation** tab >> **Auto Motion** >> **01_Functional** or **02_Scenario** libraries.



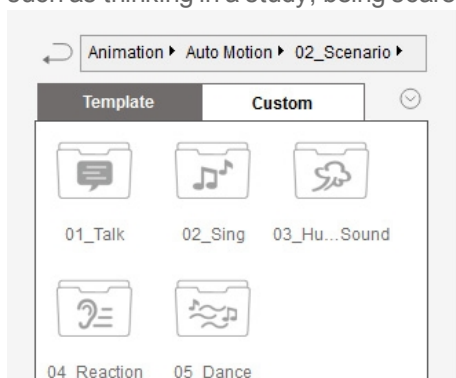
- Double-click on the desired template to change the motion pattern.

Choosing an Ideal Auto Motion Template

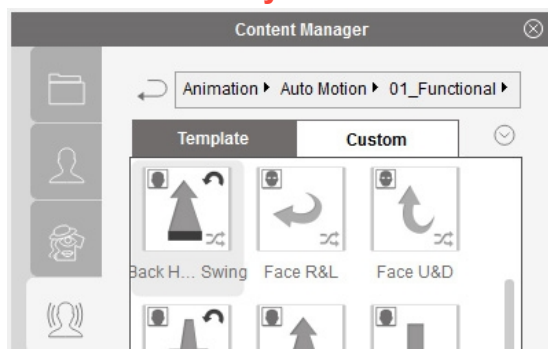
In the **Content Manager**, there are two libraries that contain **Auto Motion** templates, **01_Functional** and **02_Scenario**.



- **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.



Functional Library - Basic Movements

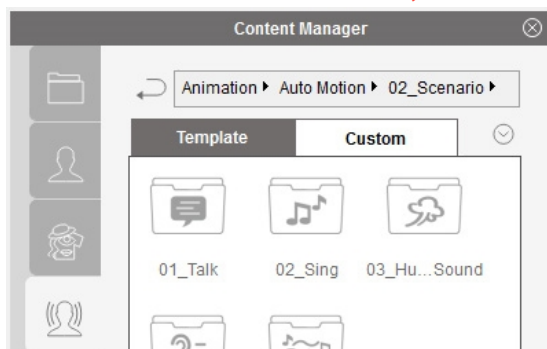


If you want the actor to do basic movements without facial expressions, such as head leaning back and forth, body moving left and right, or actor stretching, then choose one of the templates from this library.

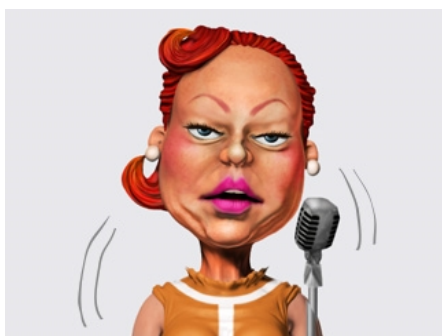


The actor talks with head moving forward and swinging motions (Without facial expressions).

Scenario >> Human Sound, Talk and Sing Libraries - Active Auto Motions



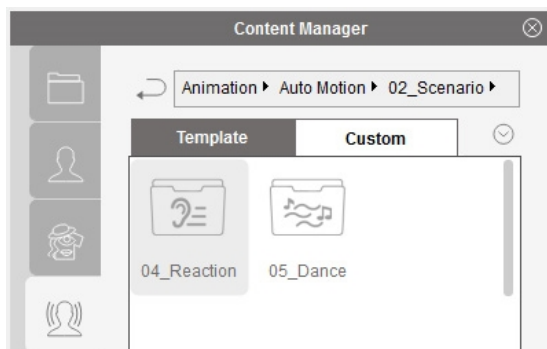
In the **Scenario** library, the templates are categorized into different folders; for the active auto motions with facial expressions, the templates are put in the **01_Talk**, **02_Sing** and **03_Human Sound** folders. You may then apply either of the template according to the context of the actor's voice.



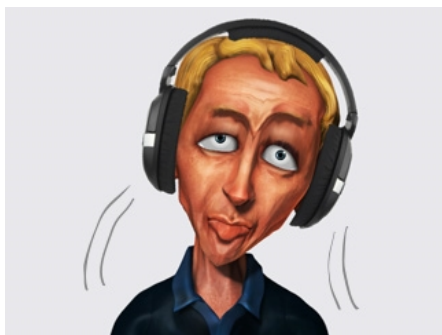
The actor talks (with facial expressions) with the **Soul** template in the **Sing** folder.

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.



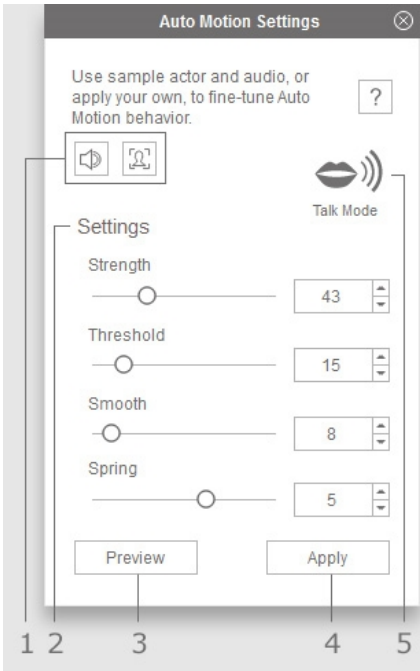
In the **Scenario** library, the templates are categorized into different folders; for the passive auto motions with facial expressions, the templates are put in the **04_Reaction** and **05_Dance** folders. You may then apply either of the template according to the context of the actor's voice.






The actor listens and react to the voice (With facial expressions) with the **Listen Talk** template in the **Reaction** folder.

Introducing the Auto Motion Setting Panel


Auto Motion Setting Panel Standard



- 1 **Basic Tools**
 -  **Audio On/Off:** Press up or down this button to preview with or without voice.
 -  **Layer Off:** Click this button to preview the motion results without the hinder of actor transform keys or baked physics data.
- 2 [Settings](#)
 - To determine the global behavior of the auto motions.
- 3 **Preview**
 - Click this button to play back in the preview pane.
- 4 **Apply**
 - 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.
- 5 **Mode Indicator**



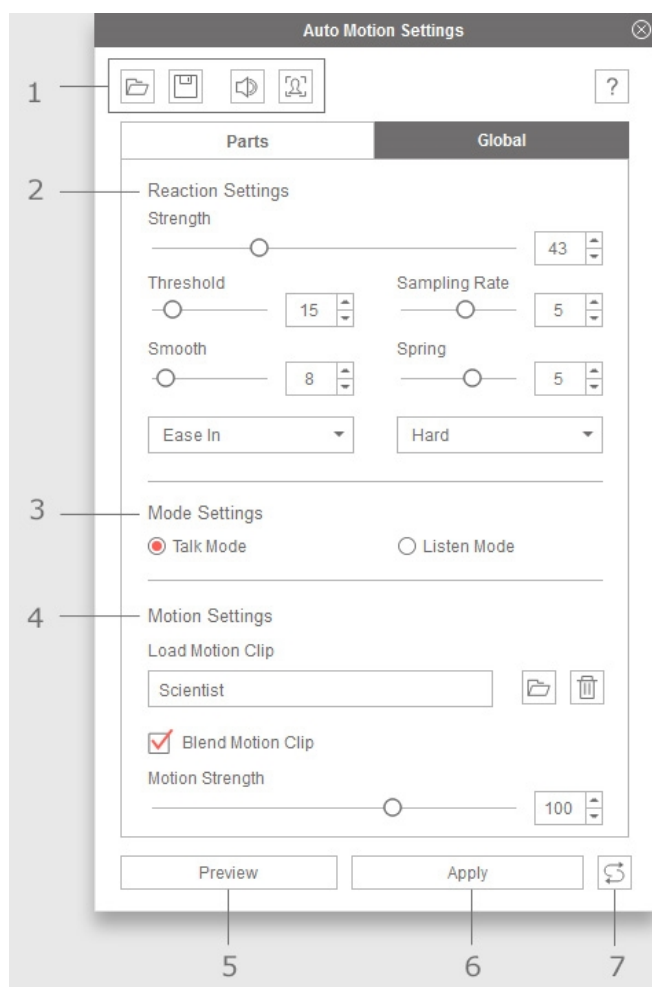
Talk Mode




Listen Mode


These labels indicate that the current actor has been applied a voice in **Talk** or **Listen** modes.

Auto Motion Setting Panel - Global **PRO**




1 Basic Tools

 **Open Profile:** Click this button to load a custom **Auto Motion Settings** profile (*.c-t7AutoMotion).

 **Save Profile:** Click this button to save the current **Auto Motion Settings** as a profile (*.c-t7AutoMotion).

 **Audio On/Off:** Toggle this button on or off to preview with or without voice.

 **Layer Off:** Click this button to preview the motion results without the hinder of actor transform keys or baked physics data.

2 [Reaction Settings](#)

3 Mode Settings

Determines the global behavior of the auto motions.

Mode Settings
☒ Talk Mode ☐ Listen Mode

4 [Motion Settings](#)

Use these two radio buttons to switch the current auto motion to [talk or listen mode](#).

Blends a motion clip into the current reactive auto motion generated with the settings in the panel.

5 Preview

Click this button to play back in the preview pane.

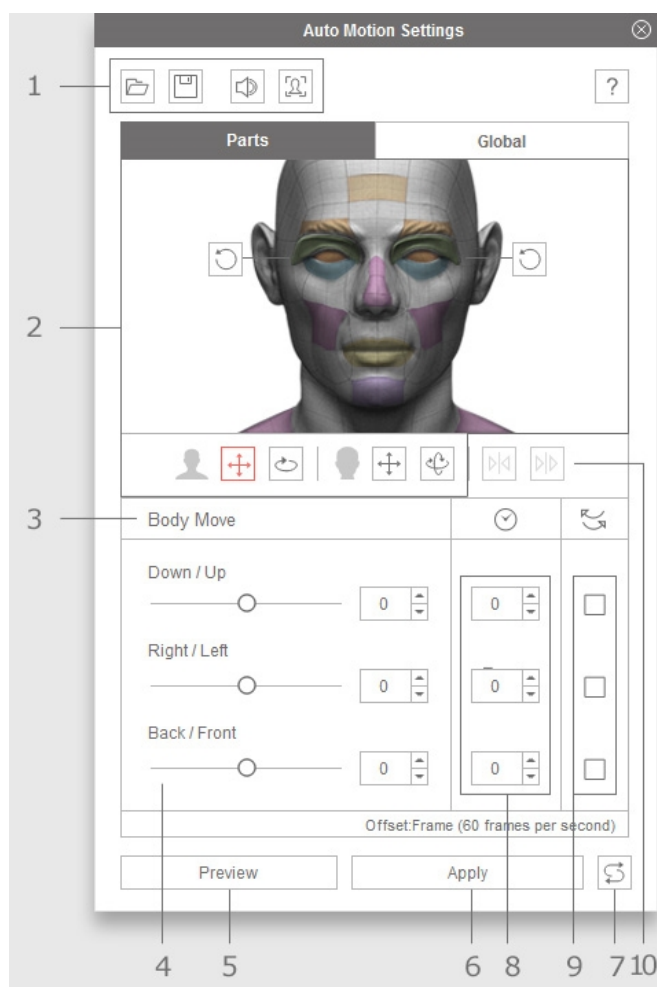
6 Apply

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.


7 Reset

Resets all of the values of the settings in the **Global** and **Parts** tabs.

Auto Motion Setting Panel - Parts **PRO**




1 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).

 **Audio On/Off:** Toggle this button to preview with or without voice.

 **Layer Off:** Click this button to preview the motion results without the hinder of actor transform keys or baked physics data.

2 Candidate Parts

Click the facial features in this pane to adjust them further.

3 Selected Part Name

Displays the name of the currently selected part.

4 Detail Settings (for Selected Part)

Drag the sliders to determine the moving direction and strength of the selected part.

5 Preview

Click this button to play back in the preview pane.

6 Apply

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.

7 Reset

Resets all the values of the settings in the **Global** and **Parts** tabs.

8 Anticipation / Follow-through

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 **Frame**.

9 Ping-pong Effect

Activate this box to create a back and forth movement pattern when the sound wave passes through the threshold.


10 Mirror / Copy Settings

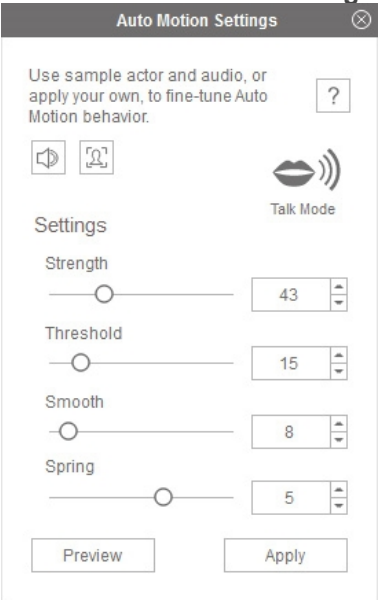
Copies or mirrors the motions for eyeballs and shoulders from one side to another. You can quickly set the same or opposite values to the other side of the select part by clicking one of these two buttons.



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 motions for best results.

Adjusting Auto Motion Settings **Standard** & **PRO**

1. Make sure that your actor has been [applied with a voice in Talk or Listen modes](#).
2. Click the **Auto Motion Settings**  button on the tool bar.



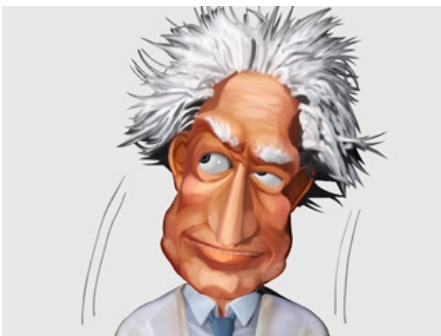
3. Click the **Preview**  button to play back.
4. Adjust the sliders in the **Setting** section to view the adjusted result.
5. Click the **Apply**  button if you are satisfied with the result.

Strength

The **Strength** determines how rough the actor moves and how exaggerated the facial expressions are.



Strength = 50



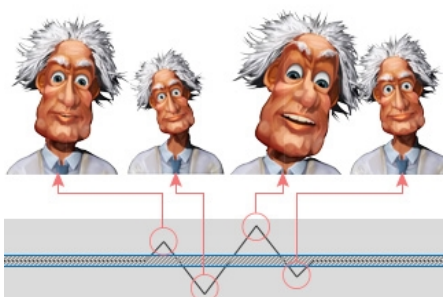
Strength = 150

Threshold

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

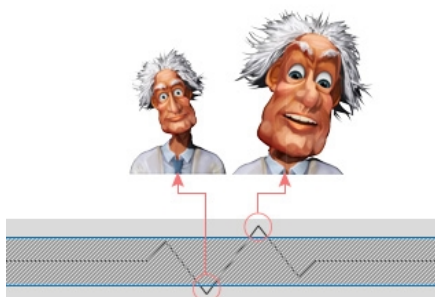


The threshold range is defined by two horizontal blue lines. Only the slopes and peaks of the audio wave line outside of the range can cause the actor to move and perform facial expressions.



Threshold = 50

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



Threshold = 150

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 springs, you need to turn down its value in order to show the spring effect.



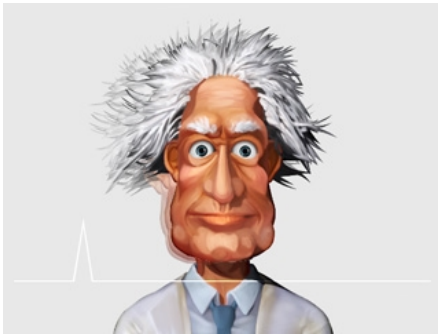
Smooth = 0



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.



Spring = 0

No aftermaths, the peak of the audio wave line drives the actor to move once.

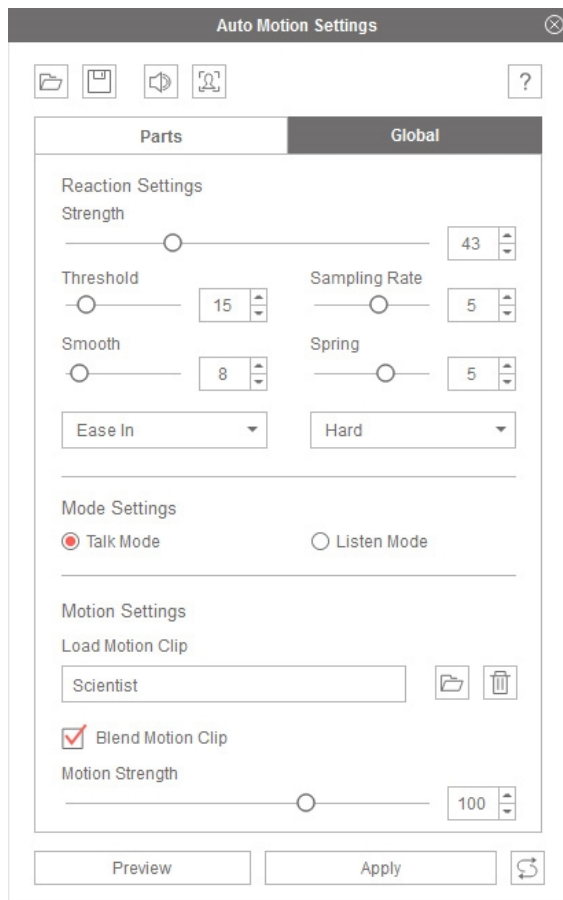


Spring = 3

Aftermaths of the peak causes more motion spring.

Additional Auto Motion Settings - Global **PRO**

In the **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 Settings

☒ Talk Mode

☐ Listen Mode

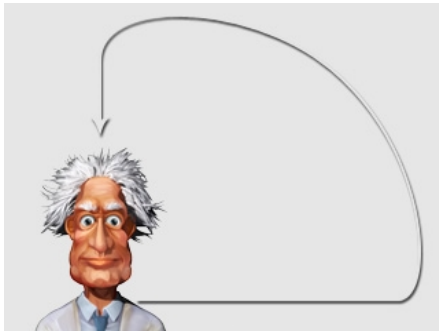
Use these two radio buttons to switch the current [Auto Motion](#) to a Talk or Listen mode.

- In the Reaction Settings Section

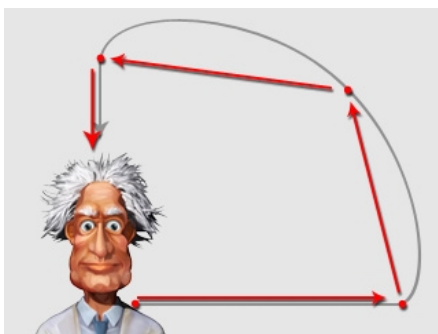
Sample Rate

The **Sample Rate** determines the sample times within specified frames for a 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:

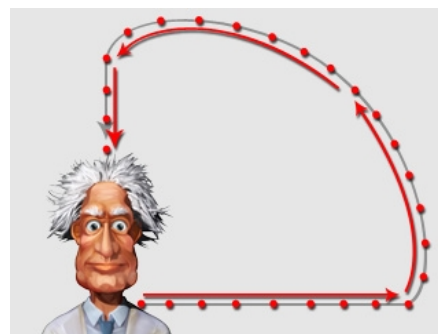


With a different sample rate, the total number of the keys grabbed from the original motion varies, which causes different results generated by a difference in the number of keys.



Sample Rate = 8 (frames/sampling time)

Only four keys are sampled, which causes sharper angles along the path.



Sample Rate = 1 (frames/sampling time)

The movement conforms more closely to the original path.

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**
Ease Out: This method results in a slight fade out following the peak of the sound wave.
- **Ease In**
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.

Ease Out 2: This method results in slower movement following the peak of the sound wave (New for 7.2).

Ease In 2: This method results in a slower movement before reaching the peak of the sound wave (New for 7.2).

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 Settings Section

Please refer to the [Blending Motion Clip to Create a Custom Auto Motion](#) (for **PRO** only) section for more information.

Blending Motion Clip to Create Custom Auto Motion **PRO**

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 **PRO** only) features.

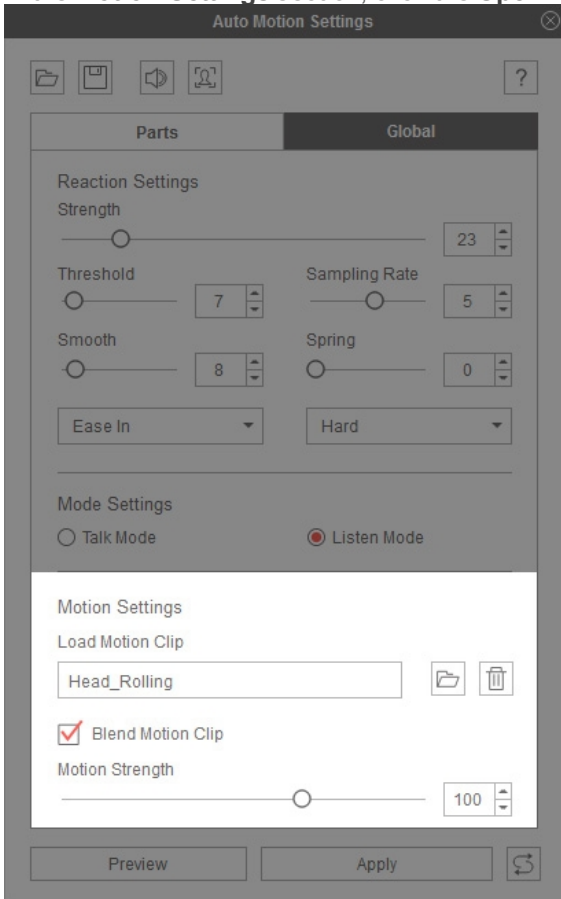



2. Create a new project and add an actor. Apply a voice file to the actor in either **Talk** or **Listen** mode (in this example, the **Talk** mode is used).
3. Follow the descriptions in the [Applying Auto Motion Template from the Library](#) section.





4. Click the **Auto Motion Settings**  button to open the panel and switch to the Global tab.
5. Click the **Preview** button to view the original auto motion.

6. In the **Motion Settings** section, click the **Open Motion File**  button to load the motion file created in step 1.



7. 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 Clip** 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.
8. 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 **PRO**

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.

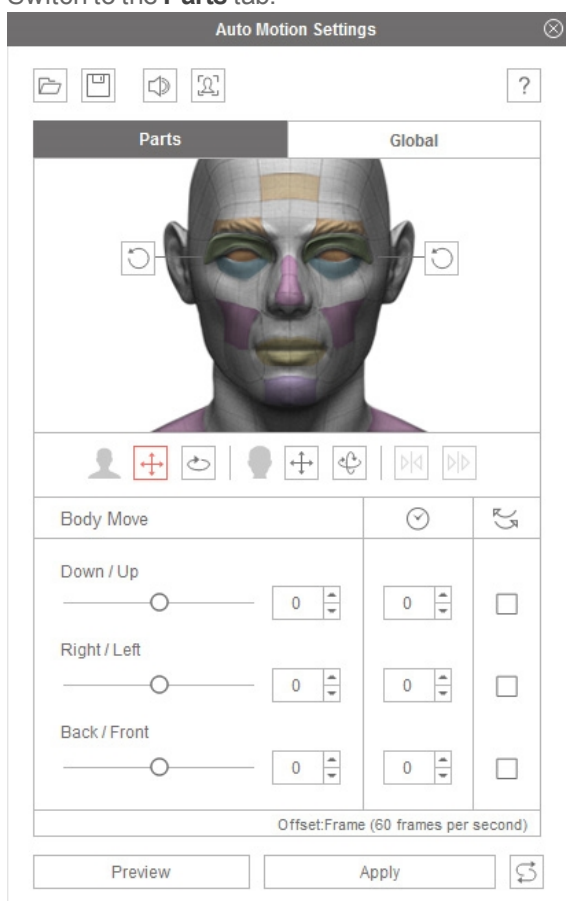
Dramatizing Parts Movements of Actor

1. Make sure that your actor has been [applied with a voice in Talk or Listen modes](#).

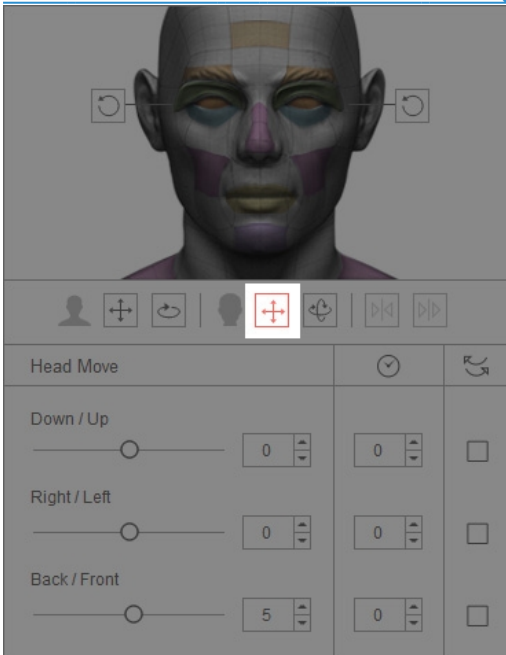


Please note that you can optionally [apply any auto motion template](#) from the **Auto Motion** library to change to an ideal motion in responding to the voice.

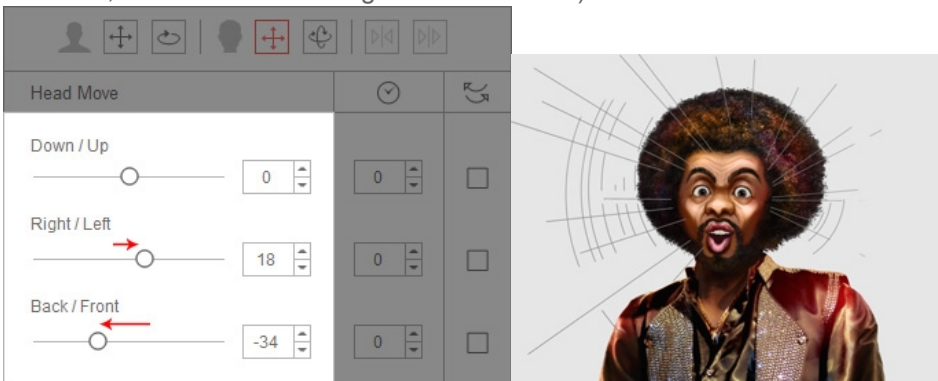
2. Click the **Auto Motion Settings**  button on the tool bar.
3. Switch to the **Parts** tab.



- Select a specific part of which the motions you want to dramatize (in this case, the head is selected). Please refer to the [Parts Movements for Auto Motion Settings Panel](#) section for more information.



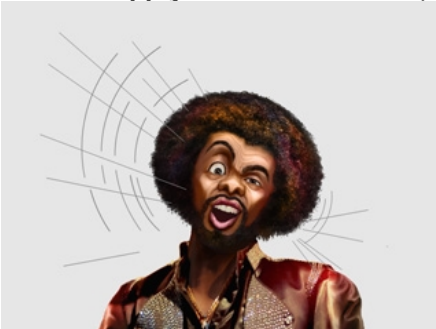
- Adjust the sliders that belong to the part (in this case, the head is designate to react right and backward in responding to the voice, which create a leaning backward motion).



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.

- Repeat steps 4 and 5 to other parts for further adjustments.
- Click the **Preview** button to play back and view the motion in the preview pane of this panel in advance.
- Click the **Apply** button if you are satisfied with the result.



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.

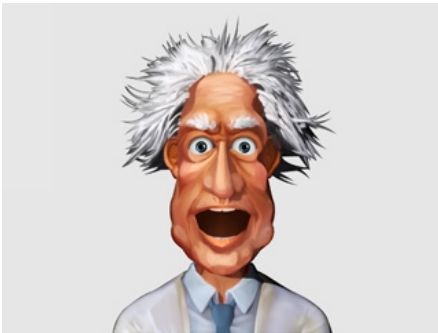
Types of Sliders

The sliders are divided into two categories:

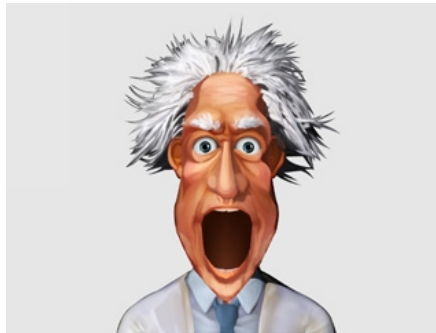
- **Strength:** Sliders of this kind can only determine the strength of the selected parts that have single direction movement, such as the **Closing of the Upper and Lower Eyelids**, the **Wrinkling of the Nose**, the **Lifting of the Nose Wings (Alae)**, and the **Lowering of the Jaw**. The value is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



Take the **Jaw** for example:



Strength = 20



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:



Down/Up = -50



Left/Right = -50



Back/Front = -50

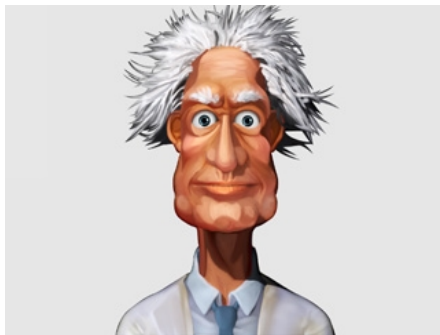


Swing = -50

- Positive value: A positive value means the selected parts will move **Right, Up, Front** or rotating **Clockwise**.



Take the **Head** for example:



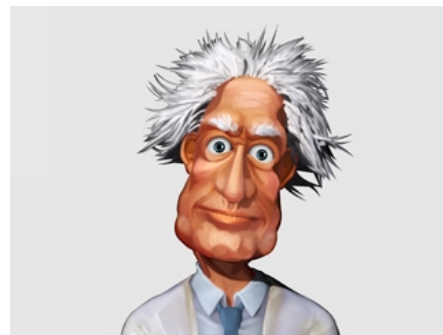
Down/Up = 50



Left/Right = 50



Back/Front = 50

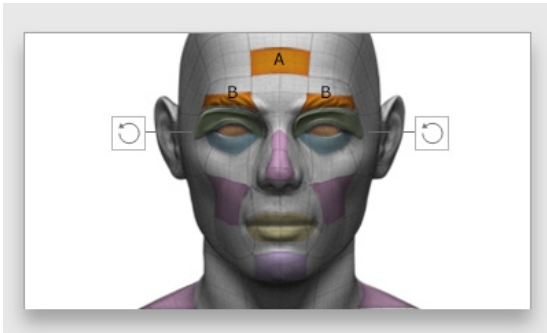


Swing = 50

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.



(R) Raise Inner/Outer

(L) Raise Inner/Outer

Sad



(R) Raise Inner/Outer

(L) Raise Inner/Outer

Suspicious



(R) Raise Inner/Outer

(L) Raise Inner/Outer

Angry



(R) Raise Inner/Outer

(L) Raise Inner/Outer

Suspicious

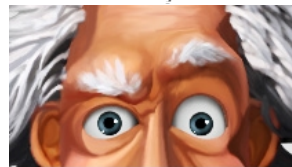
B - Eyebrows: Adjusts the individual vertical heights of the eyebrows.



(R) Lower/Raise Brow

(L) Lower/Raise Brow

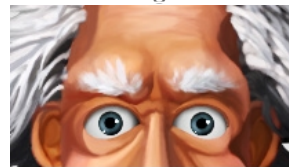
Surprised



(R) Lower/Raise Brow

(L) Lower/Raise Brow

Doubtful



(R) Lower/Raise Brow

(L) Lower/Raise Brow

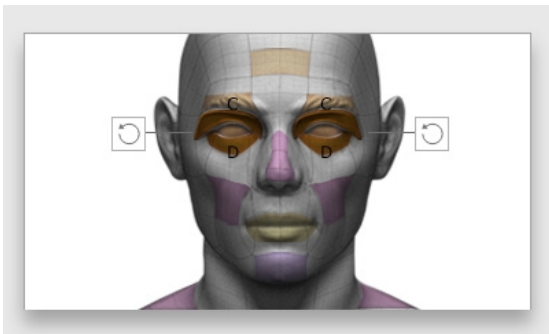
Serious



(R) Lower/Raise Brow

(L) Lower/Raise Brow

Doubtful



C - Upper Eyelids: Adjusts the individual open/close level of the upper eyelids.



(R) Close Eye
 100

(L) Close Eye
 0

Winking



(R) Close Eye
 100

(L) Close Eye
 100

Sleepy



(R) Close Eye
 0

(L) Close Eye
 100

Winking

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



(R) Raise Lid
 100

(L) Raise Lid
 0

Embarrassed



(R) Raise Lid
 100

(L) Raise Lid
 100

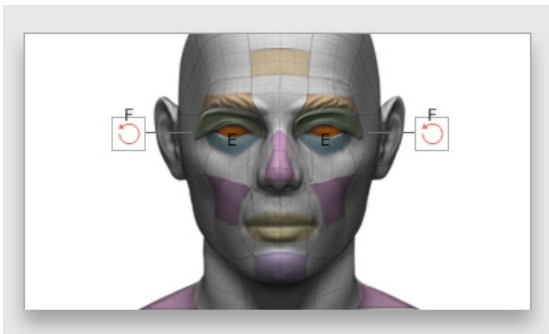
Suspicious



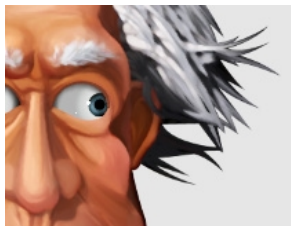
(R) Raise Lid
 0

(L) Raise Lid
 100

Embarrassed



E - Eyeball Horizontal Movement



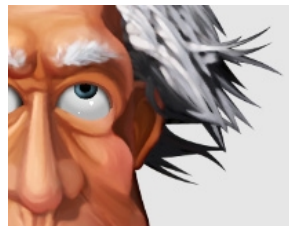
Right / Left
 100

Searching Right



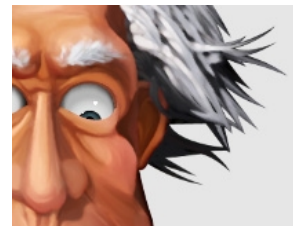
Right / Left
 -100

Searching Left



Down / Up
 100

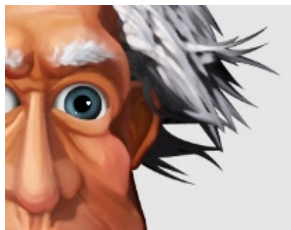
Evasive



Down / Up
 -100

Apologetic

E - Iris Enlarging



Shrink/Enlarge Iris
 100

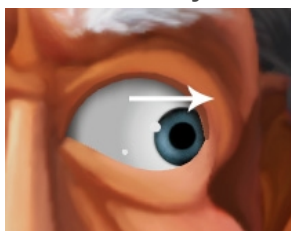
Naive



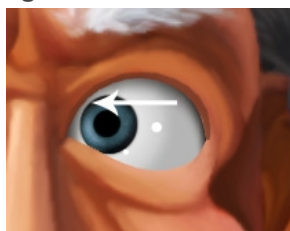
Shrink/Enlarge Iris
 -100

Shocked

F - Eyeball Rotating Start Position

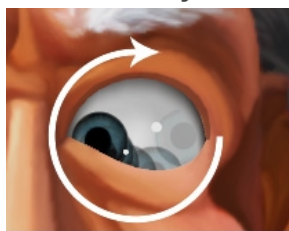


Off Center
 50



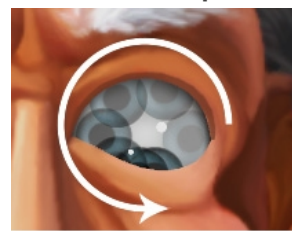
Off Center
 -50

F - Eyeball Rotating Direction and Speed



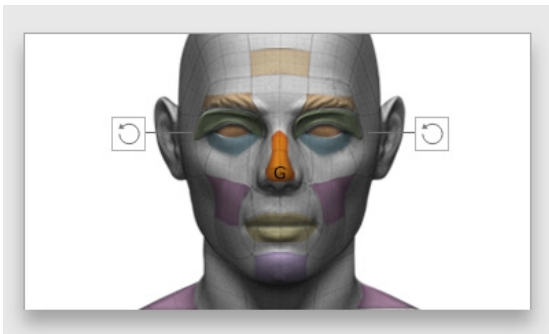
Movement CCW/CW
 100

Anxious



Movement CCW/CW
 -100

Anxious



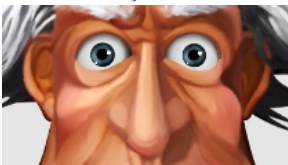
G - Nose Wings (Alae): Adjusts the individual raising level of the nostrils.



(R) Raise Nose Wing 100

(L) Raise Nose Wing 0

Disdainful



(R) Raise Nose Wing 100

(L) Raise Nose Wing 100

Denying



(R) Raise Nose Wing 0

(L) Raise Nose Wing 100

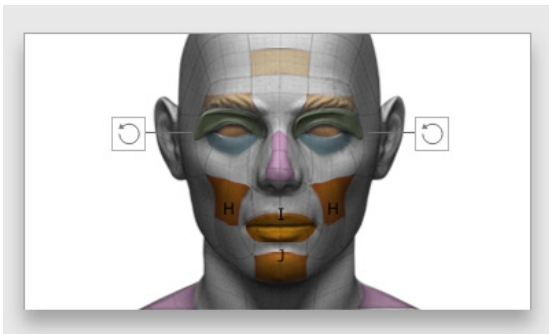
Disdainful

G - Wrinkle Nose

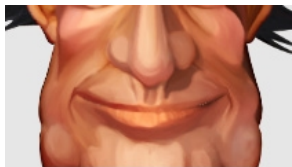


Nose Scrunch 100

Annoyed



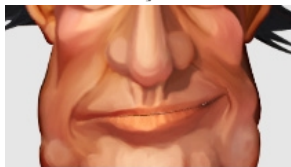
H - Cheeks: Adjusts the individual raising or dropping level of the cheeks.



(R) Droop/Raise Edge

(L) Droop/Raise Edge

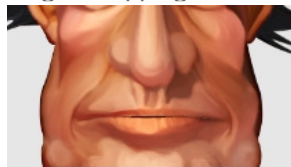
Happy



(R) Droop/Raise Edge

(L) Droop/Raise Edge

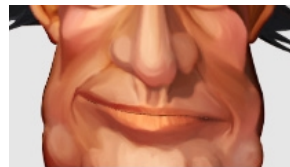
Depreciatory



(R) Droop/Raise Edge

(L) Droop/Raise Edge

Sad



(R) Droop/Raise Edge

(L) Droop/Raise Edge

Depreciatory

I - Flatten or Funnel Lips



Widen/Puckered Open

Considering



Widen/Puckered Open

Approving



Zipped Tight/Puckered

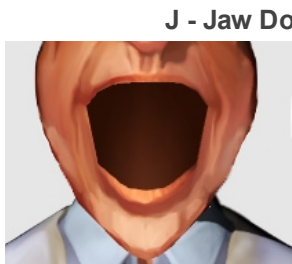
Objecting



Zipped Tight/Puckered

Unwilling

I - Sip or Pucker Lips



Move Down

J - Jaw Down



Move Right/Left

Move Right/Left

J - Jaw Left / Right

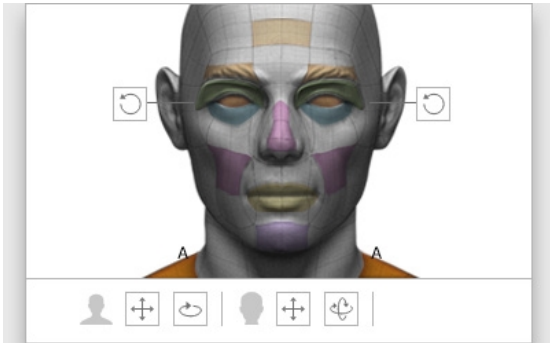


Move Right/Left

Move Right/Left

Upper Body Movement - Head, Shoulders and Body

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



A - Shoulder Horizontal Movement

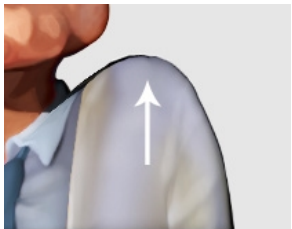


Right / Left



Right / Left

A - Shoulder Vertical Movement

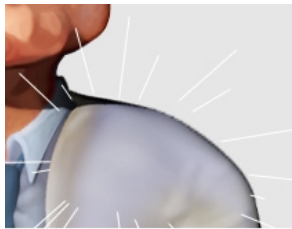


Down / Up



Down / Up

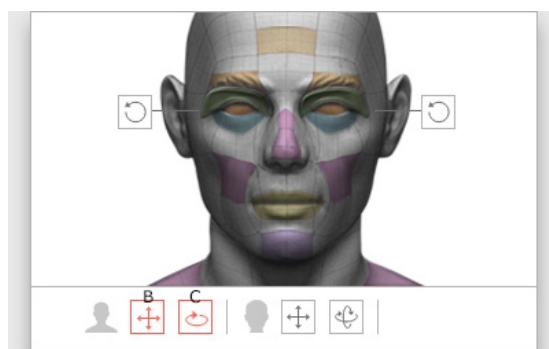
A - Shoulder Back/Front




Back / Front



Back / Front




B - Actor Horizontal Movement



Right / Left

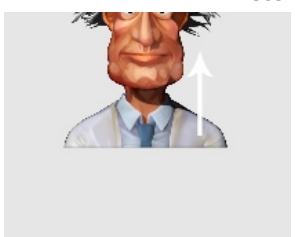
100



Right / Left

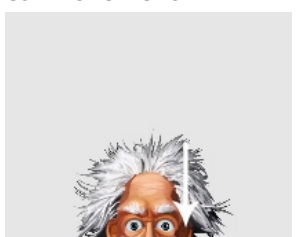
-100

B - Actor Vertical Movement



Down / Up


100



Down / Up


-100

B - Actor Back/Front



Back / Front


100



Back / Front


-100

C - Actor Rotate



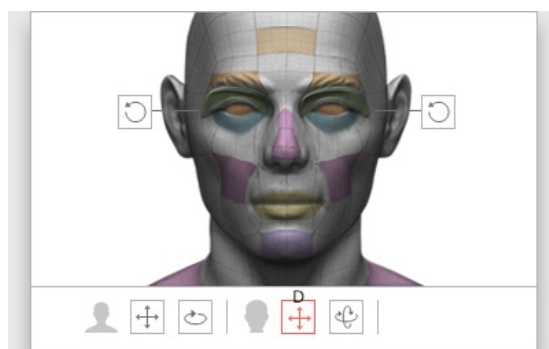
Swing CCW/CW

100



Swing CCW/CW

-100



D - Head Horizontal Movement



Right / Left
 100



Right / Left
 -100

D - Head Vertical Movement



Down / Up
 100

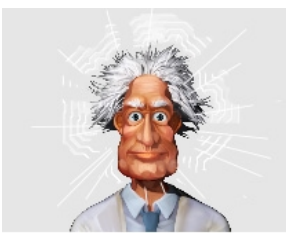


Down / Up
 -100

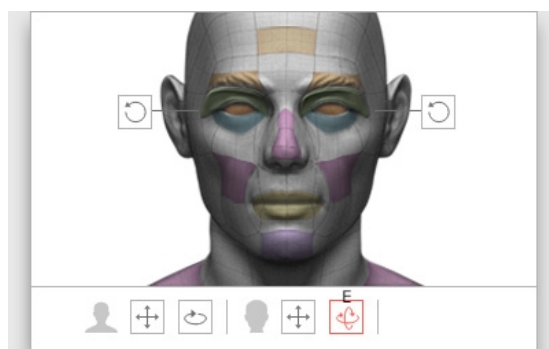
D - Head Back/Front



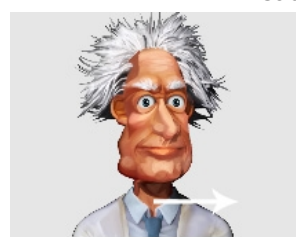
Back / Front
 100



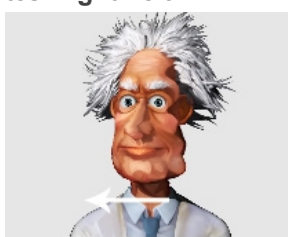
Back / Front
 -100



E - Head Rotates Right/Left

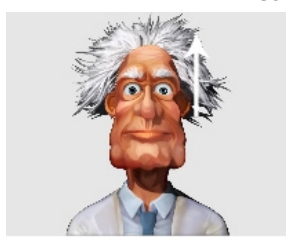


Right / Left
 100



Right / Left
 -100

E - Head Rotates Up/Down



Down / Up
 100



Down / Up
 -100

E - Head Swings Clockwise/Counterclockwise



Swing CCW/CW
 100



Swing CCW/CW
 -100

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.

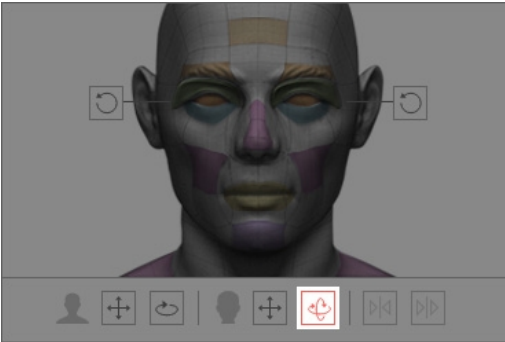
Offsetting Motions of a Single Part (Head Only)

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 Settings**  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.



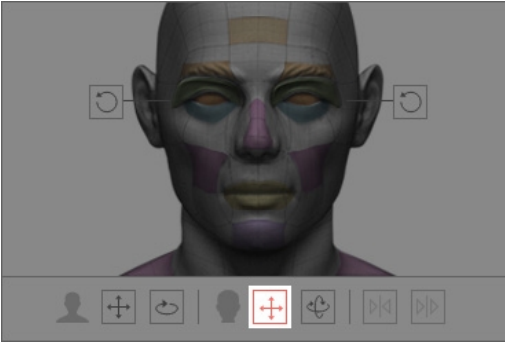
5. Adjust the parameter value for the **Head Rotate** (the higher the value, the stronger the head rotates):

Head Rotate		
Down / Up <input type="range"/> 0	<input type="range"/> 0	<input type="checkbox"/>
Right / Left <input type="range"/> 0	<input type="range"/> 0	<input type="checkbox"/>
Swing CCW/CW <input type="range"/> 100	<input type="range"/> 0	<input type="checkbox"/>

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



6. Select the **Head Move** button.



7. Adjust the settings for the **Head Move**:

Head Move		✓	↺
Down / Up	<input type="range"/> -20	<input type="text" value="0"/>	<input type="checkbox"/>
Right / Left	<input type="range"/> 50	<input type="text" value="0"/>	<input type="checkbox"/>
Back / Front	<input type="range"/> 0	<input type="text" value="0"/>	<input type="checkbox"/>

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

The actor's head move in a linear fashion and rotate to the bottom left 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 **Right/Left** slider.

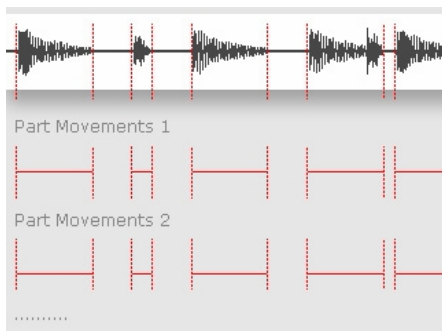
Head Move		✓	↺
Down / Up	<input type="range"/> -20	<input type="text" value="0"/>	<input type="checkbox"/>
Right / Left	<input type="range"/> 50	<input type="text" value="6"/>	<input type="checkbox"/>
Back / Front	<input type="range"/> 0	<input type="text" value="0"/>	<input type="checkbox"/>

This step postpones the move-to-left motion for the head (unit: frame).

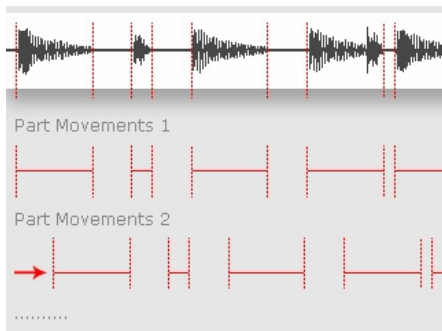


The Theory of Offsetting

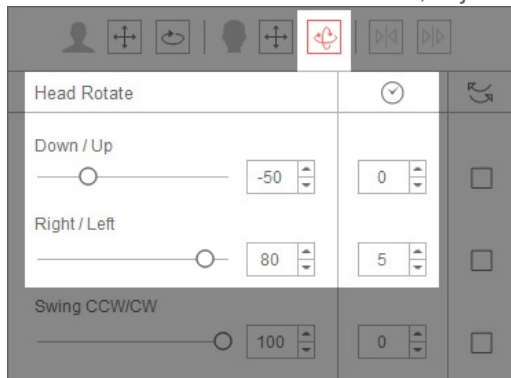
The auto motion is auto-generated in accordance with the settings in the **Auto Motion Settings** panel. Essentially, motions merely react to the peaks of the sound wave (The higher the peak is, the stronger the motions are).



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.
- **Right/Left:** Increase the value to make the head rotate left; also add the **Offset** value to make the head start to rotate left 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)

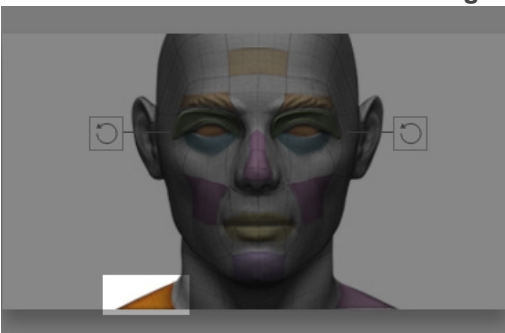
The example in the previous section may appear a little stiff due to the fact that the actor is only moving its head. By using the **Offset** (follow-through) effect, you can set the shoulders and body to move at a different time than the head, which creates a nice wave movement style starting from the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

Shoulders Movements


1. The actor from the previous section merely waves its head.



2. Click the **Auto Motion Settings**  button on the tool bar to display the panel.
3. Switch to the **Parts** tab and select the **Right Shoulder** part.



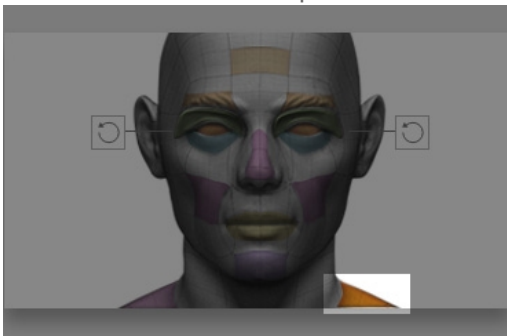
4. Adjust the parameter values for the **Right Shoulder**:

Right Shoulder		<input checked="" type="checkbox"/>	
Right / Left	<input type="text" value="-100"/>	<input type="text" value="8"/>	<input type="checkbox"/>
Down / Up	<input type="text" value="-100"/>	<input type="text" value="8"/>	<input type="checkbox"/>
Back / Front	<input type="text" value="-100"/>	<input type="text" value="0"/>	<input type="checkbox"/>

- **Right/Left:** Decrease 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.
- **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 **Left Shoulder** part.



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

Left Shoulder		⌚	↺
Right / Left	<input type="text" value="100"/>	<input type="text" value="8"/>	<input type="checkbox"/>
Down / Up	<input type="text" value="100"/>	<input type="text" value="8"/>	<input type="checkbox"/>
Back / Front	<input type="text" value="100"/>	<input type="text" value="0"/>	<input type="checkbox"/>

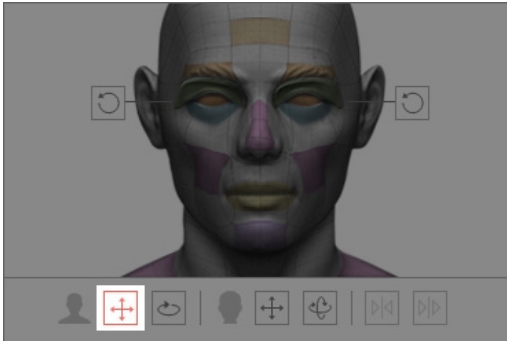
- **Right/Left:** Increase the value to make the shoulder move left; also increase the **Offset** value to make the shoulder start to move left a little bit later.
- **Down/Up:** Increase the value to make the shoulder move up; also increase the **Offset** value to make the shoulder start to move up a little bit later.
- **Back/Front:** Increase the value to make the shoulder move forward.



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**:

Body Move		⌚	↺
Down / Up	<input type="text" value="-5"/>	<input type="text" value="6"/>	<input type="checkbox"/>
Right / Left	<input type="text" value="12"/>	<input type="text" value="10"/>	<input type="checkbox"/>
Back / Front	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="checkbox"/>

- **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.
- **Right/Left**: Increase the value to make the body move left; 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)

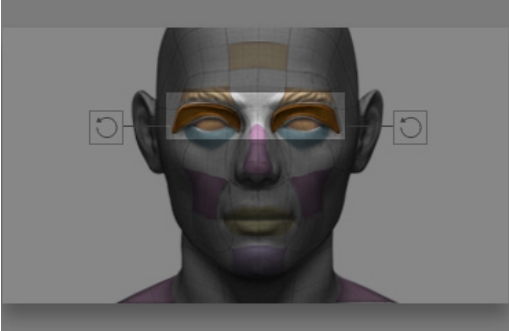
Although the motion of the head and body in the previous example appears more vigorous, the expression on the actor's face doesn't really express that he's happily dancing along to the music. By using the anticipation skill, you are able to set the auto motion to occur earlier than the voice to make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

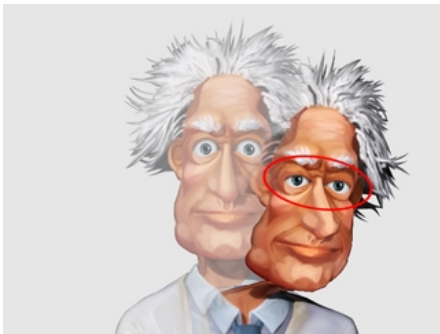


4. Adjust the settings for the **Upper Eyelids**:

Upper Eyelids		✓	⌂
(R) Close Eye	<input type="text" value="45"/>	<input type="text" value="0"/>	<input type="checkbox"/>
(L) Close Eye	<input type="text" value="45"/>	<input type="text" value="0"/>	<input type="checkbox"/>

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

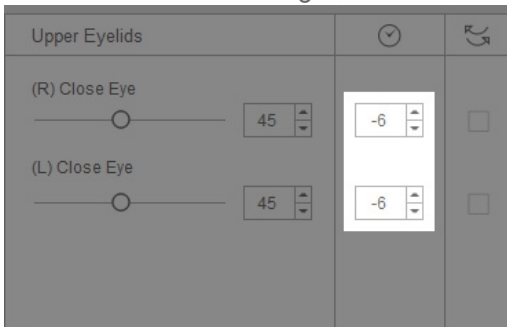
When the actor's head moves to the left, the upper eyelids closed. However, the eyes will be wide open when it comes to the strong beats.



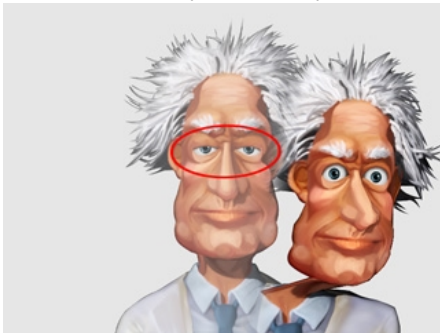
Note:

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

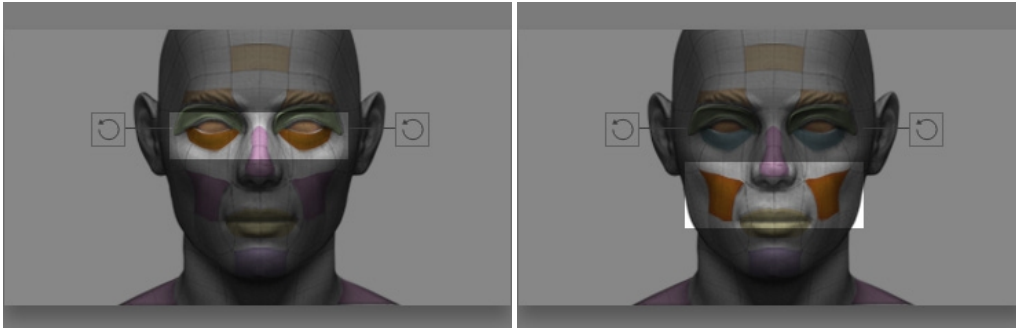
5. Decrease the **Offset** to negative values in the numeric fields beside the **(R) Close Eye** and **(L) Close Eye** sliders.



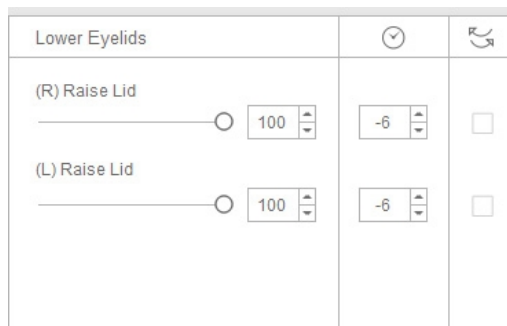
This step advances the upper eyelids closing motion, which cause the actor close the upper eyelids before it starts to move to the left (unit: frame).



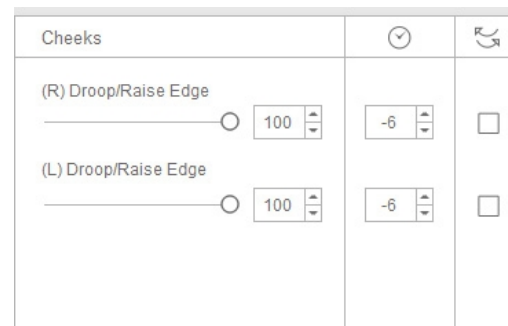
6. With the same concept, individually select the **Lower Eyelids** and **Cheeks**.



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:



(R) Raise Lid, (L) 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.



(R) Droop/Raise Edge, (L) 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.



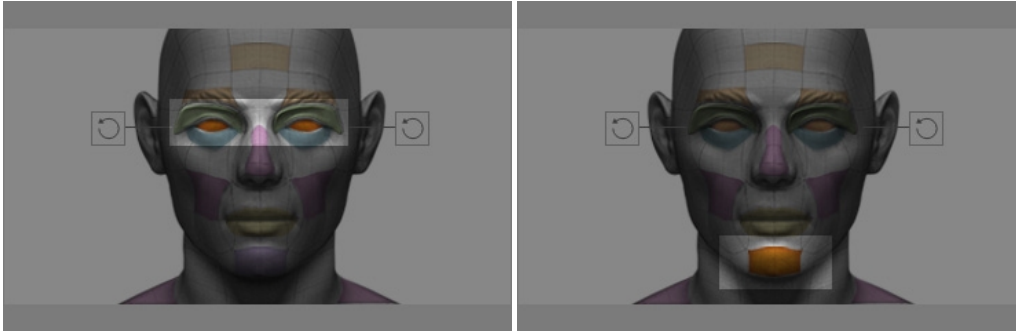
2. Adjust the parameter values for the **Eyebrows**:

Eyebrows		☑	↺↻
(R) Lower/Raise Brow	<input type="text" value="100"/>	<input type="text" value="4"/>	<input type="checkbox"/>
(L) Lower/Raise Brow	<input type="text" value="100"/>	<input type="text" value="4"/>	<input type="checkbox"/>



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




3. With the same concept, individually select the **Right Eyeball**, **Left Eyeball** and **Jaw** parts.



4. Adjust the parameter values for the **Right** and **Left Eyeballs** and **Jaw** to generate a happy appearance when it comes to the stronger beats of the voice:

Right Eyeball	<input checked="" type="checkbox"/>	
Left Eyeball	<input checked="" type="checkbox"/>	
Down / Up	<input type="checkbox"/>	<input type="checkbox"/>
Right / Left	<input type="checkbox"/>	<input type="checkbox"/>
Shrink/Enlarge Iris	<input type="checkbox"/>	<input type="checkbox"/>

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



Jaw	<input checked="" type="checkbox"/>	
Move Down	<input type="checkbox"/>	<input type="checkbox"/>
Move Right/Left	<input type="checkbox"/>	<input type="checkbox"/>

Move Down, Move Right/Left: Increase the values to make the jaw move down and to the left; 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).

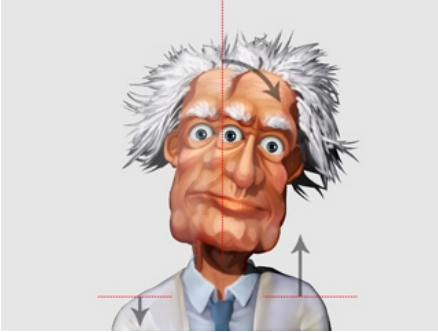
5. Click the **Preview**  button to play back and view the motion in the preview pane of this panel in advance.
 * Please note that you can adjust the value during the preview playback to see the real-time result before applying.
6. Click the **Apply**  button if you are satisfied with the result.

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.

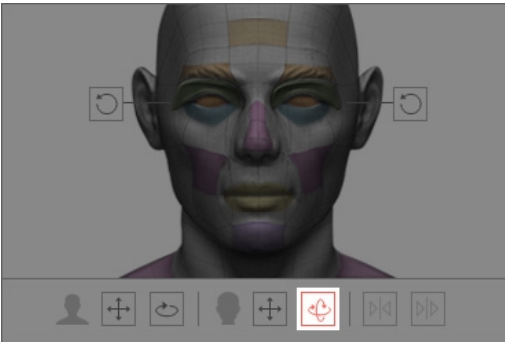
Using the Pingpong Feature

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).

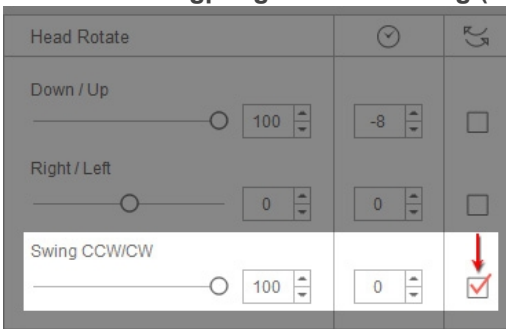


The [settings for the parts](#) will only let the actor's head rotate to the right, the left shoulder raise up and the right shoulder lower down.

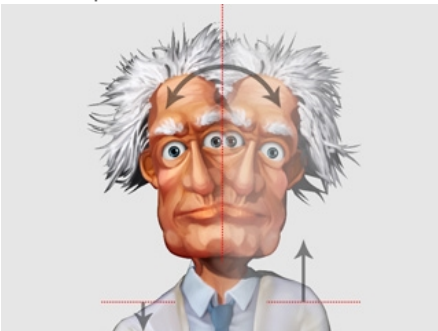
2. Click the **Auto Motion Settings**  button to open the panel and switch to the **Parts** tab.
3. Select the **Head Rotate** button.



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.

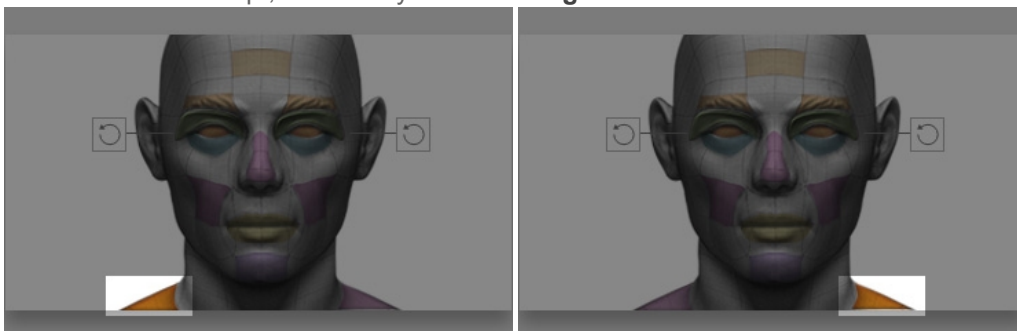
The Theory of Pingpong

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 left, returns to the initial position and then moves to the right.
 - **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 right, returns to the initial position and then moves to the left.
 - **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 **Right Shoulder** and **Left 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:

Left Shoulder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Right Shoulder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Right / Left	<input type="text" value="0"/>	<input type="text" value="0"/>	Right / Left	<input type="text" value="0"/>	<input type="text" value="0"/>
Down / Up	<input type="text" value="-80"/>	<input checked="" type="checkbox"/>	Down / Up	<input type="text" value="80"/>	<input checked="" type="checkbox"/>
Back / Front	<input type="text" value="0"/>	<input type="checkbox"/>	Back / Front	<input type="text" value="0"/>	<input type="checkbox"/>



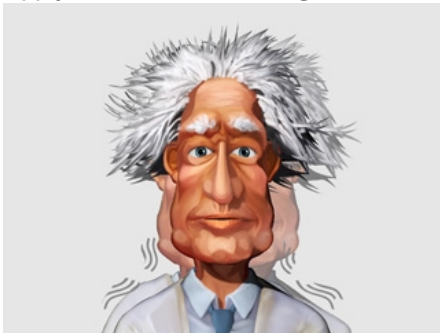
- Click the **Apply** button to apply the modified auto motion profile.


Mirroring or Copying Values

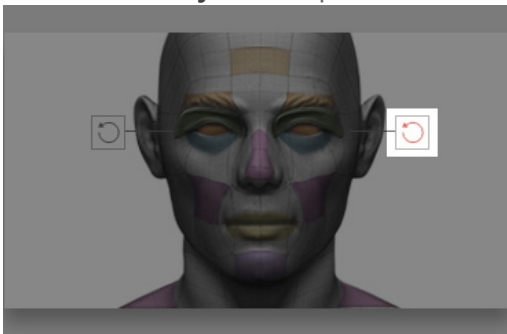
The parameter values for the **Eyeballs** (move and rotate) and the **Shoulders** can be copied to each other so that you do not need to manually set them one by one when you need them to have a same or opposite motion patterns.

Mirroring the Parameter Values for Eyeballs



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



- Click the **Auto Motion Settings**  button to open the panel and switch to the **Parts** tab.
- Select the **Left Eye Rotate** part.




- Set the parameter values.






Left Eye Rotate		
Off Center <input type="range"/> 25	0	<input type="checkbox"/>
Movement CCW/CW <input type="range"/> 100	-6	<input checked="" type="checkbox"/>





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



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

5. Instead of remembering the values for the entire settings of the **Left Eyeball** and manually setting the opposite values for the **Right Eyeball**, simply click the **Mirror**  button and values from the left eyeball are reversed and copied to the other one.

Right Eye Rotate			
Off Center  -25	0	<input type="checkbox"/>	
Movement CCW/CW  -100	-6	<input checked="" type="checkbox"/>	

Left Eye Rotate			
Off Center  25	0	<input type="checkbox"/>	
Movement CCW/CW  100	-6	<input checked="" type="checkbox"/>	

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.

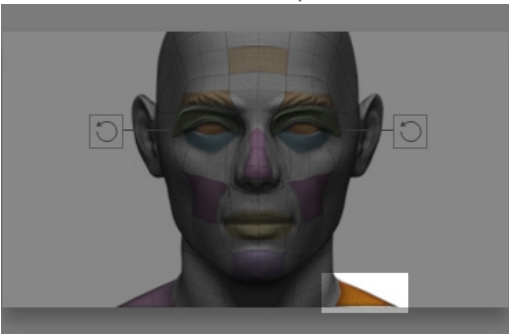
Copying the Parameter Values for Shoulders

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





The actor is laughing without shoulder movements.

2. Click the **Auto Motion Settings**  button to open the panel and switch to the **Parts** tab.
3. Select the **Left Shoulder** part.




4. Set the parameter values.




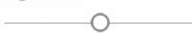
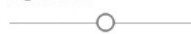


Left Shoulder			
Right / Left	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="checkbox"/>
Down / Up	<input type="text" value="100"/>	<input type="text" value="0"/>	<input type="checkbox"/>
Back / Front	<input type="text" value="-40"/>	<input type="text" value="3"/>	<input type="checkbox"/>

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

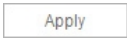


Activate the box and the left shoulder is able to move up and down.

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

Right Shoulder			Left Shoulder		
Right / Left  0	0	<input type="checkbox"/>	Right / Left  0	0	<input type="checkbox"/>
Down / Up  100	0	<input type="checkbox"/>	Down / Up  100	0	<input type="checkbox"/>
Back / Front  -40	3	<input type="checkbox"/>	Back / Front  -40	3	<input type="checkbox"/>



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](#).

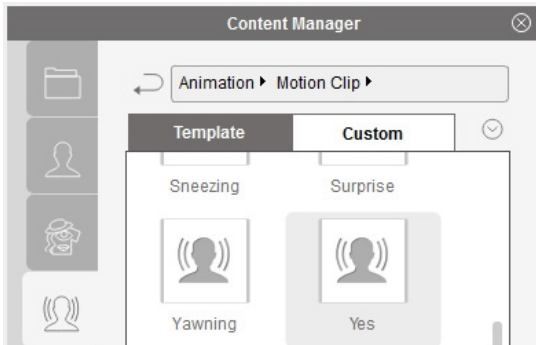


The actor is applied with a template from the **Auto Motion** library.

2. Go to the time frame where you want the actor to have different facial expressions or movements.

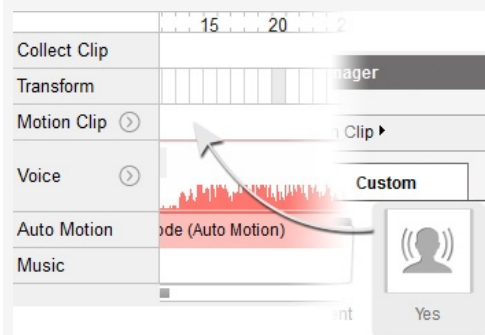


3. In the **Content Manager**, switch to the **Animation** tab. You will see motion clip templates in the **Motion Clip** library.



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**.



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



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

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

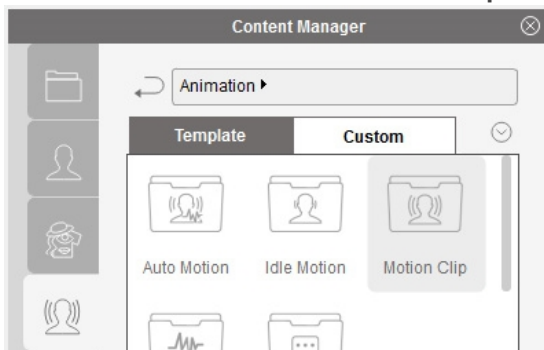
By applying various motion clips in different timeframes, the actor can have emotional changes.

1. Follow the steps described in the previous section to [overlap a motion clip to the auto motion](#).

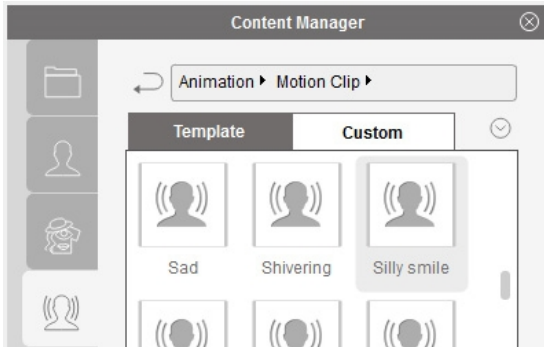


Apply the motion clip "Yes" for nodding the head.

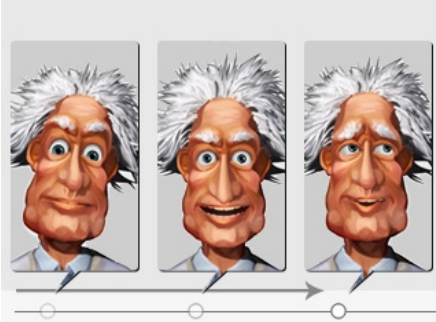
2. Go to another time frame where you want the actor to change its emotion.
3. Access the **Animation** tab >> **Motion Clip** library in the **Content Manager**.



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.

Motion Clip	Yes	Silly smile
Auto Motion	Flirting (Auto Motion)	

Note:

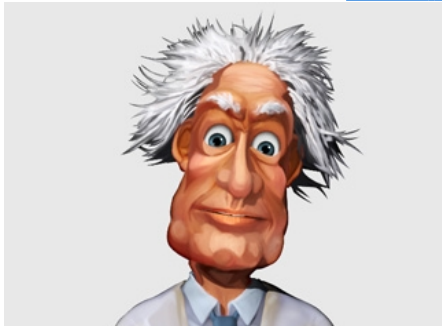
If you want to *blend motion clips* instead of overlapping the auto motion, then please refer to the [Blending Motion Clips with Face Puppet Panel](#) section for more information.

Blending Facial Expressions with the Face Puppet Panel

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

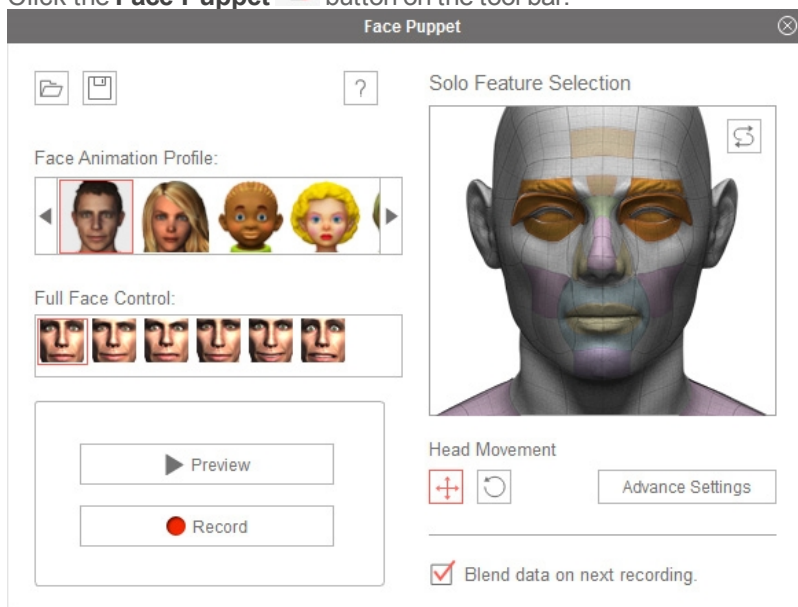
1. Make sure the actor has been [applied with a voice](#) with either [idle](#) or [auto motion](#).



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.

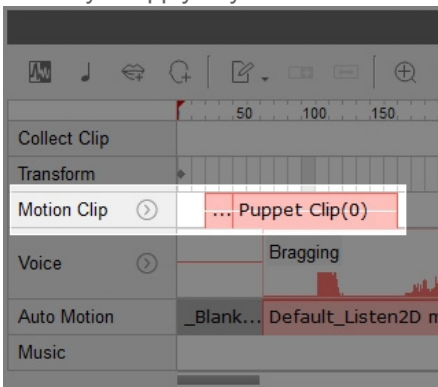
5. Use the [Full Face Control Puppeteering](#) method; or alternatively, use the [Solo Feature Selection Puppeteering](#) methods to record and blend a new facial expression.



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.

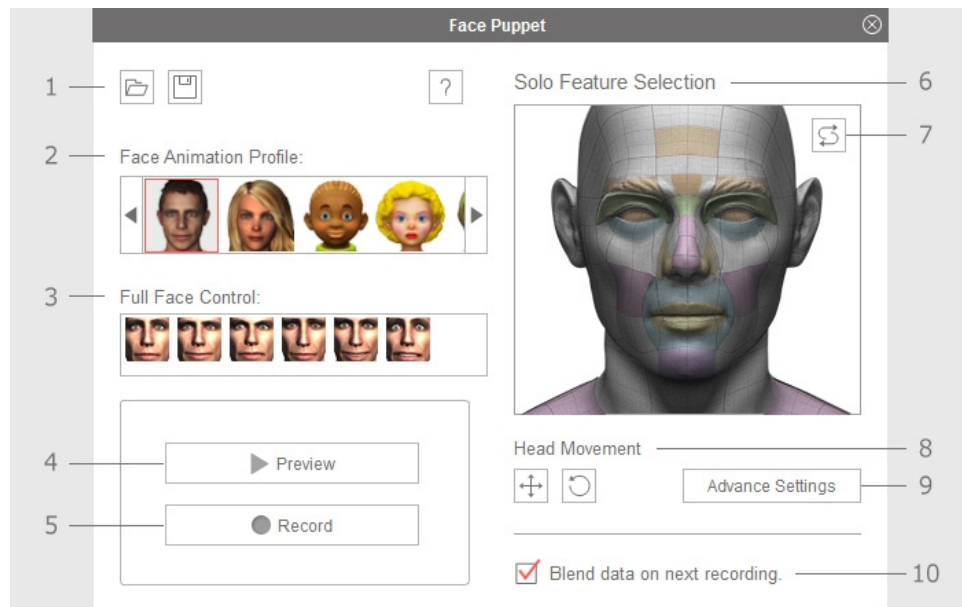


Note:

Please also refer to the following sections for more information:

- [Introducing the Face Puppet Panel](#)
- [Recording Blinking](#)
- [Creating Custom Puppet Profiles](#)

Introducing the Face Puppet Panel



1 [Open and Save Profile](#)

2 [Face Animation Profile](#)

3 [Full Face Control](#)

4 [Preview](#)

(Space bar)

5 [Record](#)

(Windows: Ctrl + Shift + Space bar)

(Mac: Option + Space bar)

6 [Solo Feature Selection](#)

7 [Clear Selection](#)

8 [Puppet Head](#)

9 [Advance](#)

10 [Blend data on next recording](#)

Click these two buttons to load and save profiles.

Select one of the built-in profiles from the list. Each profile contains various expressions.

Select one of the expressions, with pre-defined weight settings, for varying facial features.

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

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.

Select to change any desired features. The changes will automatically be converted into keys during recording.

Deselect any highlighted features.

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

Adjust the weight of a feature, in detail, with movements from your input device (Mouse by default).

Activate this checkbox so that the new motions of the selected features are blended into existing keys after recording.

Full Face Control Puppeteering


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

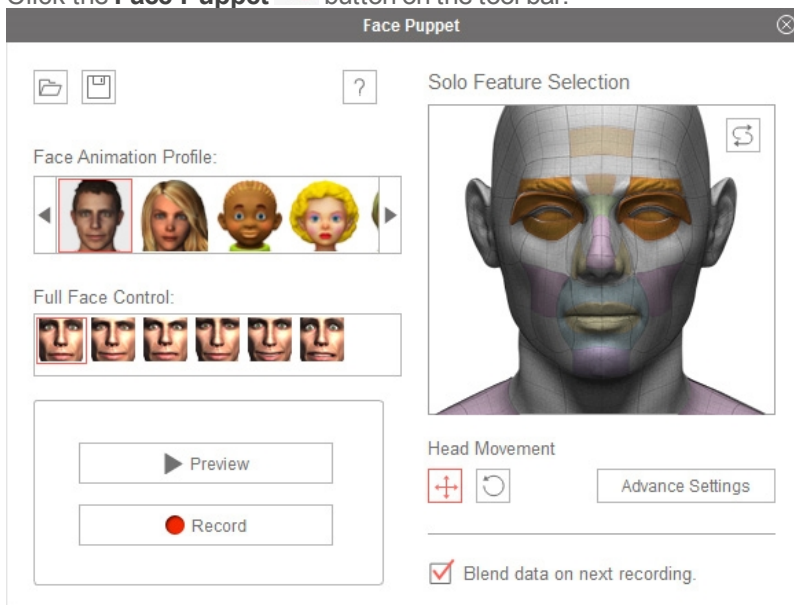
Using Full Face Control Puppeteering

1. Make sure the actor has been [applied with a voice](#) with either [idle](#) or [auto motion](#).



The actor has an applied voice and auto motion

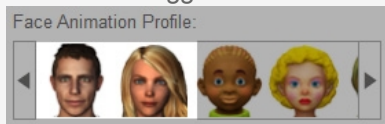
2. Go to the time frame where you want to blend custom facial expressions to the existing motion.
3. Click the **Face Puppet**  button on the tool bar.



4. 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_Human_Male** and **2_Human_Female**, profiles for the actor with real human face in order to get higher realism, gentle animations; the rest are for cartoon characters with more exaggerated animations.



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**  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 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:

- 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 have enough space to move mouse up, down, left and right for puppeteering.
- ii. Press the **Ctrl + Shift + 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 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.

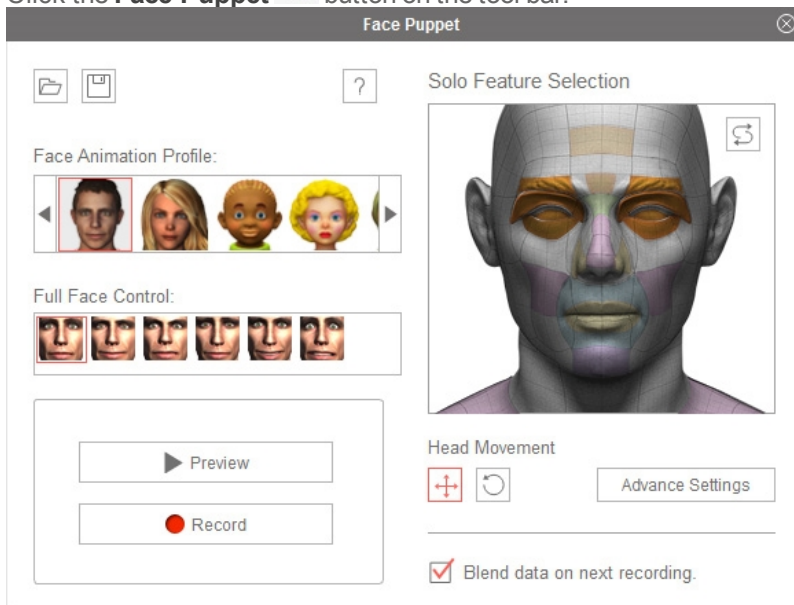
Using Solo Feature Selection Puppeteering

1. Make sure the actor has been [applied with a voice](#) with either [idle](#) or [auto motion](#).

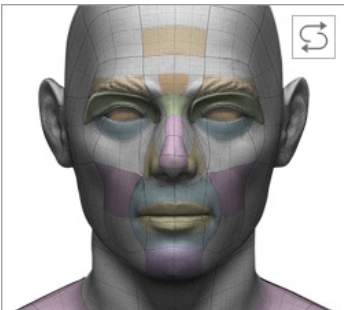


The actor has applied with voice and auto motion

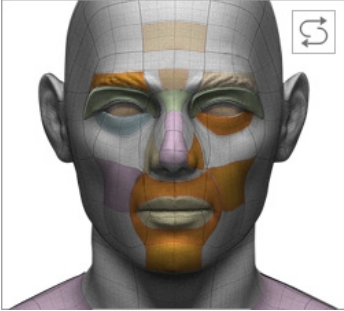
2. Go to the time frame where you want to blend custom facial expressions to the existing motion.
3. Click the **Face Puppet**  button on the tool bar.



4. Click the **Clear Puppet**  button.
All the selected features will be deselected.



5. Pick the desired facial features from the **Solo Feature Selection** pane.




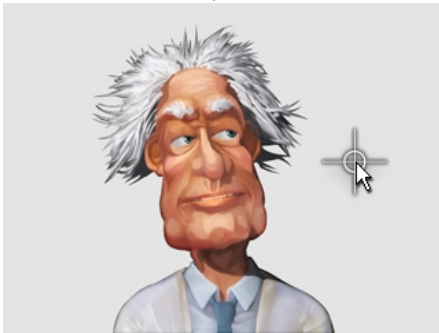
Note:

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:

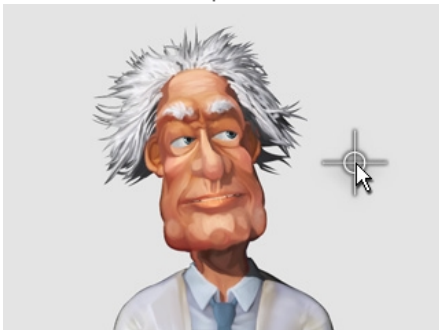
Standard Method:

- 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.




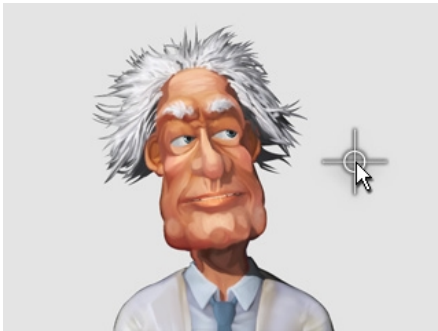
7. Move your mouse to puppet. The selected facial features will be triggered to move with the mouse cursor. Press the **Space bar** again to stop previewing.



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

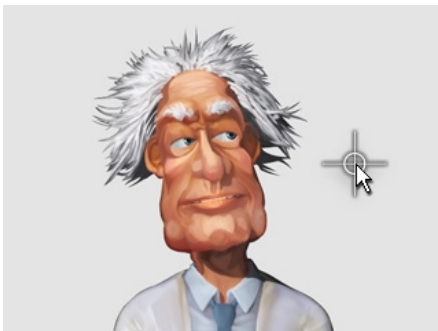
Standard Method:

- Click the **Record**  **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 can have enough space to move mouse up, down, left and right for puppeteering.
- Press the **Ctrl + Shift + 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.



- Move your mouse to puppet. The animations will be recorded into a clip. Press the Space bar again to stop recording.
- Once the recording stops, a motion clip with the entire recorded expressions will be stored in the **Motion Track**.

Note:

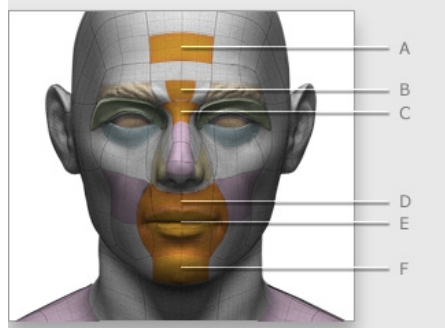
Please also refer to the [Multi-Layer Recording](#) section for more information.

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.

Bilateral Facial Features



A. Forehead



Mouse moves up
Sad



Mouse moves down
Anger

B. Both Eyebrows



Mouse moves up
Surprised



Mouse moves down
Suspicious

C. Both Eyelids

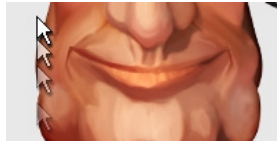


Mouse moves up
Shocked

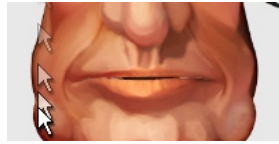


Mouse moves down
Tired

D. Both Cheeks

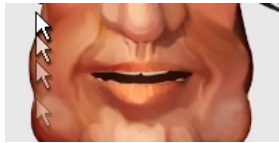


Mouse moves up
Smiling

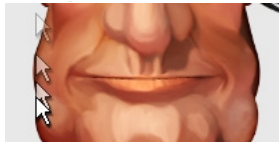


Mouse moves down
Upset

E. Mouth Shape

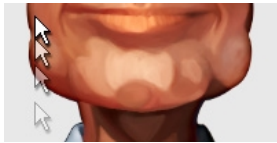


Mouse moves up
Pouting



Mouse moves down
Lips-biting

F. Jaw Bone

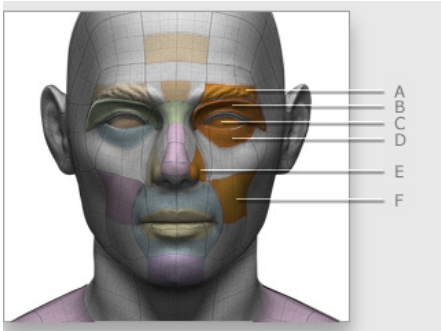


Mouse moves up
Jaw up

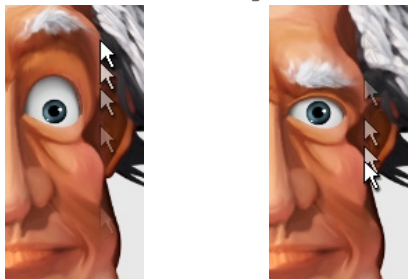


Mouse moves down
Jaw Down

Unilateral Facial Features



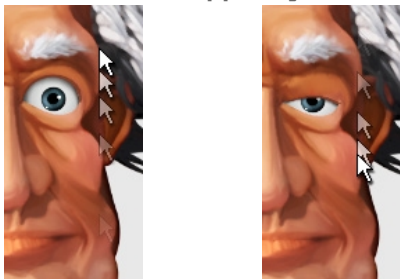
A. Eyebrow



Mouse moves up
Surprised

Mouse moves down
Indifferent

B. Upper Eyelid



Mouse moves up
Shocked

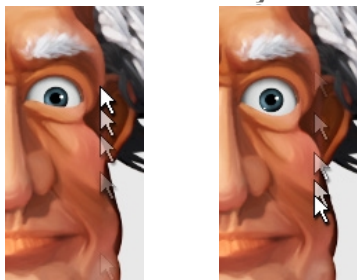
Mouse moves down
Sleepy

C. Eyeball



Eyeball rolling

D. Lower Eyelid



Suspicious

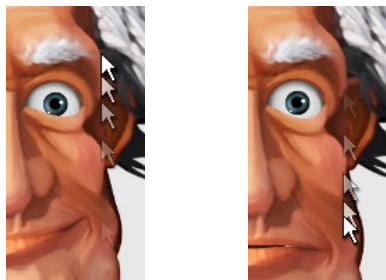
E. Ala



Mouse moves up
Disgusted

Mouse moves down
Admitting

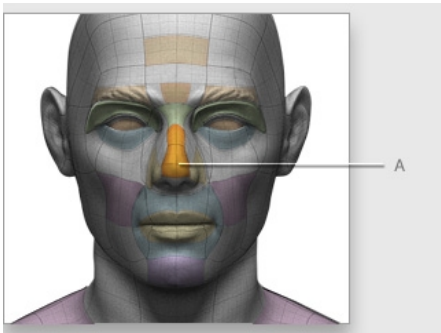
F. Cheek



Mouse moves up
Smiling

Mouse moves down
Sad

Multiple Facial Features



A. Nose, Forehead, Cheeks and Mouth



Mouse moves up
Calm



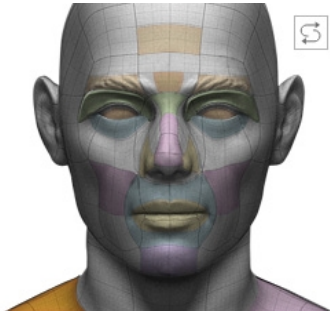
Mouse moves down
Threatening

Shoulders Puppeteering for 3D Actor (New for Version 8)

In addition to the solo facial features that are used for puppeteering the facial features, the shoulders areas on the dummy pane can be selected for triggering the body and shoulder movements of the 3D actor.

Single Shoulder Movements

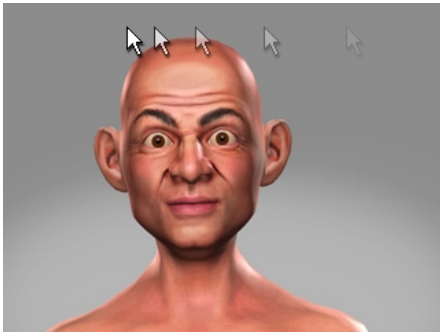
- Actor's Right Shoulder



Mouse moves up
Actor shrugs its right shoulder



Mouse moves down
Actor droops its right shoulder

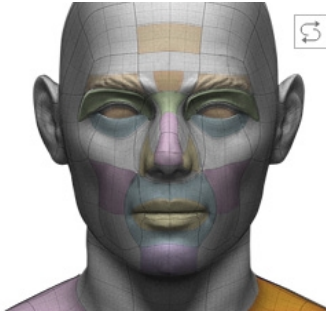


Mouse moves left
Actor leans leftward



Mouse moves right
Actor leans rightward

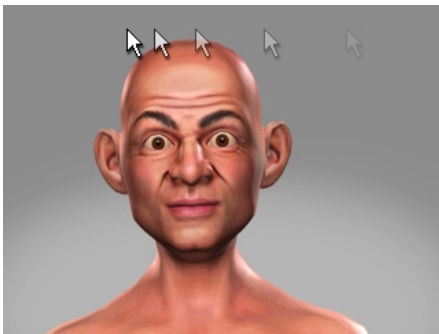
- Actor's Left Shoulder



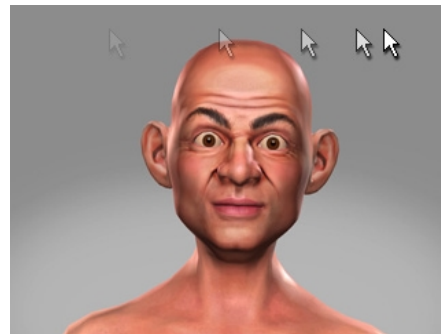
Mouse moves up
Actor shrugs its left shoulder



Mouse moves down
Actor droops its left shoulder

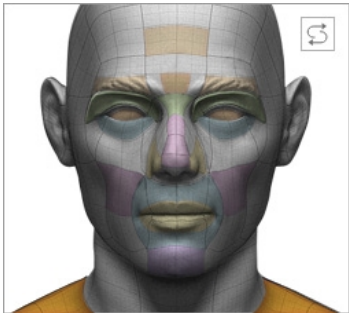


Mouse moves left
Actor leans leftward



Mouse moves right
Actor leans rightward

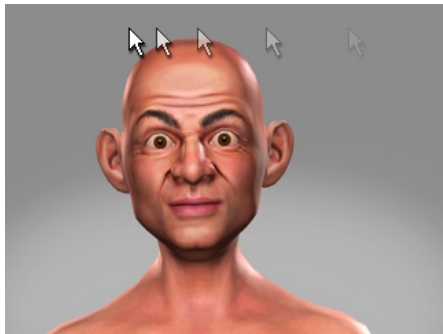
Double Shoulders Movements



Mouse moves up
Actor shrugs its both shoulders



Mouse moves down
Actor droops its both shoulders



Mouse moves left
Actor leans leftward



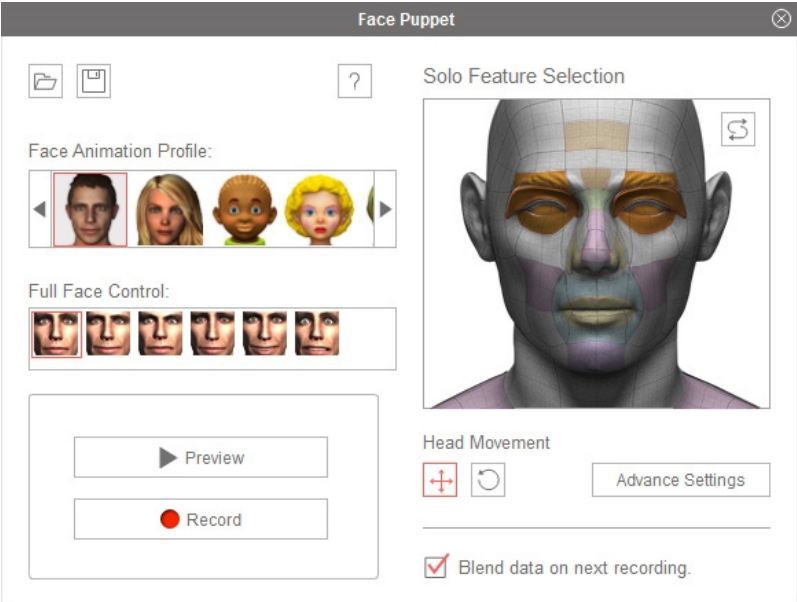
Mouse moves right
Actor leans rightward

Multi-Layer Recording

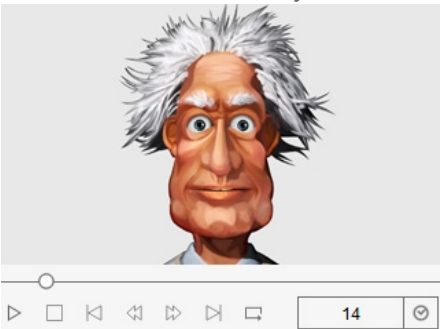
When you follow the instructions in the [Solo Feature Selection Puppeteering](#) section, then you are generating a facial clip expression at one time. However, you may also apply the multi-layer recording method to individually record the feature motions.

Using Solo Feature Selection Puppeteering

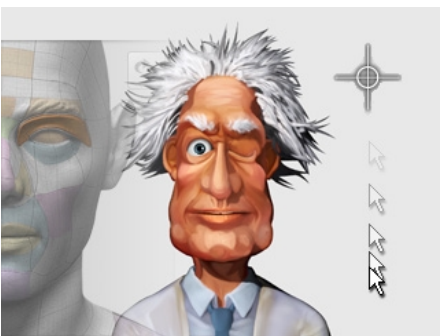
1. Launch the **Face Puppet Panel**.



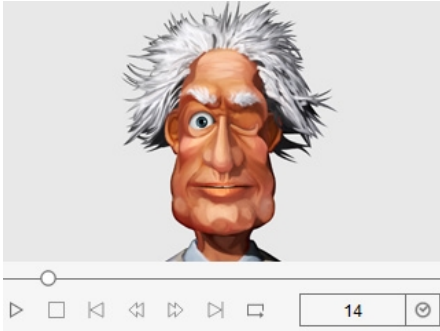
2. Make sure that the **Blend data on next recording** is activated in order to perform the multi-layer recording.
3. Go to a timeframe where you want to start puppeteering.




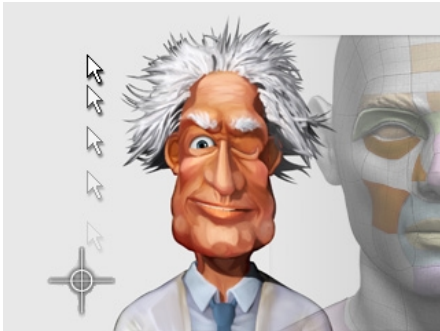
4. Select one feature and record the puppeteering result as a clip. Please refer to the [Solo Feature Selection Puppeteering](#) section for more information.



5. Go to the timeframe specified in Step 3.



6. Click the **Clear Puppet**  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

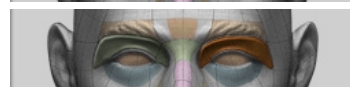
1. Following features can be used to control blinking.
Blink Both Eyes



Blink Left Eye

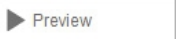


Blink Right Eye



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 + Shift + 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.

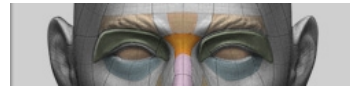


5. The blinking of the eyes will be blended into the motion clip once the recording finishes.

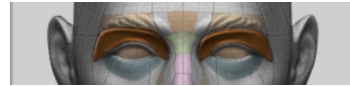
Dragging for Blinking Speed and Duration

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.
Blink Both Eyes



Blink Left Eye




Blink Right Eye



2. Start to preview or record.

Previewing

Standard Method:

- i. Click the **Preview**  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:

- Click the **Record**  button.
- 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 **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:

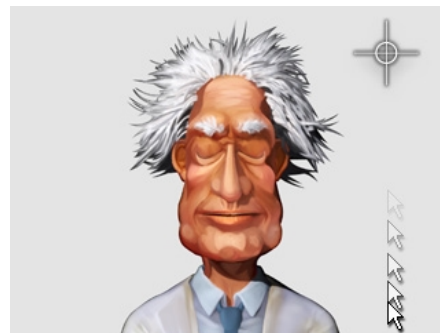
- Move your mouse cursor to the center of your display so that you have enough space to move mouse up, down, left and right for puppeteering.
- Press the **Ctrl + Shift + Space Bar** for **Windows** or **Option + Space Bar** for **Mac** to start recording. A crosshair shows where the mouse cursor is, to indicate the position of a neutral expression.



- 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



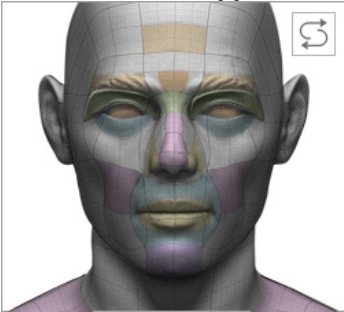
Move down to full close

Creating Custom Puppet Profiles

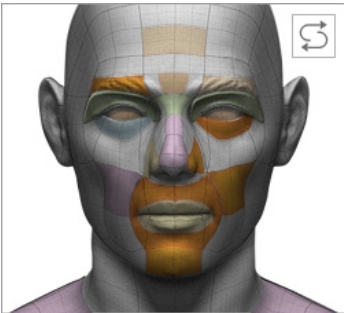
Create your own, unique puppet profiles or modify existing profiles with the **Advanced** pane.

Creating and Saving Custom Profiles

1. Click the **Clear Puppet**  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**  **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.

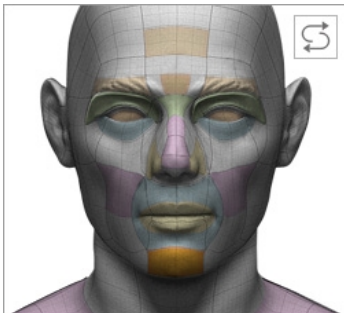


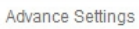
4. If you are satisfied with the results, then click the **Save Puppet Profile**  button to save your custom profile.

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.

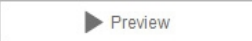


2. Click the **Advance Settings**  button to expand the weight pane.
3. Modify the values in the **Weight** column, of the corresponding feature, to specify the weight movements triggered by your mouse.

Facial	Feature	Weight
Face	Right Lower Lid	0
	Left Lower Lid	0
	Nose Scrunch	0
	Right Nose	0
	Left Nose	0
	Raise/Droop Lip	0
	Sip Lip	0
	Right Cheek	0
	Left Cheek	0
	Jaw	100
Eyes	Left X	0
	Left Y	0
	Right X	0
	Right Y	0

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.

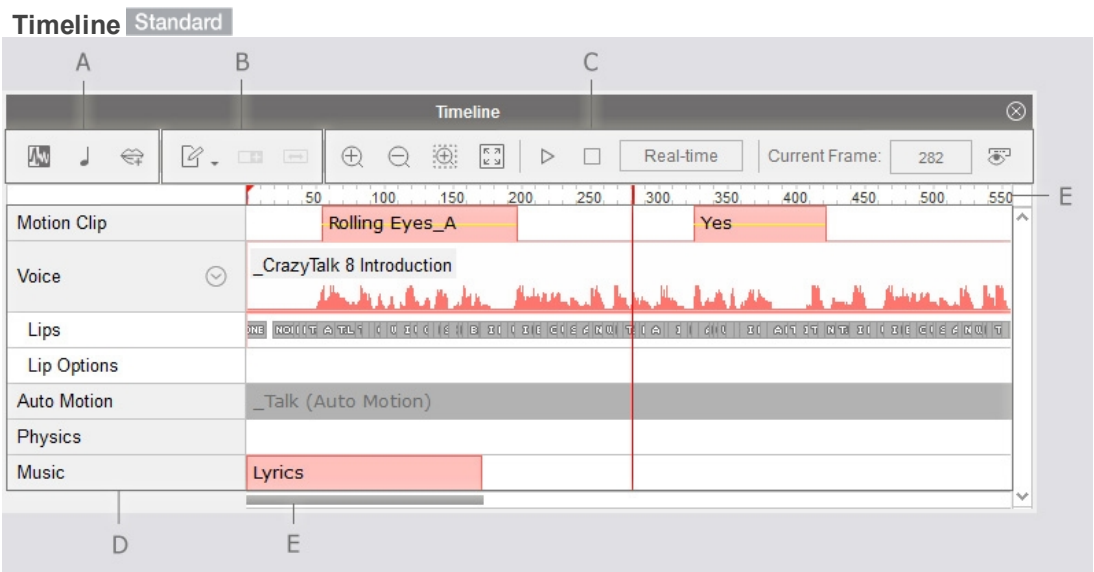
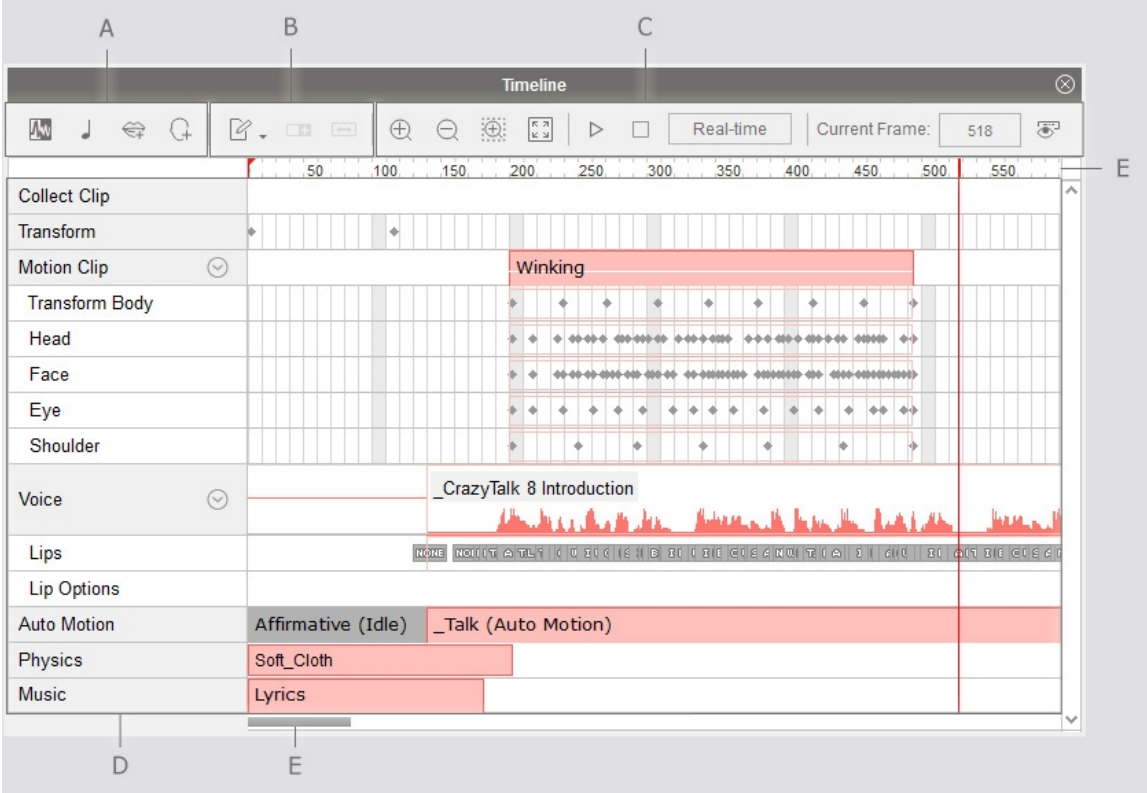
CHAPTER 8

Using Timeline

Introducing the Timeline (New)

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.

Timeline **PRO** **Timeline** **Standard**
Timeline **PRO**



A. Audio Editing Tools



- 1 [Voice Morph](#)
- 2 [Background Music](#)
- 3 [Lips Editor](#)
- 4 **PRO** [Face Key Editor](#)

Click to invoke the **Voice Morph** panel to apply artificial voice effects to the original voice.

Click to invoke the **Background Music Setting** panel to add background music to the project.

Click to invoke the **Lips Sync** panel to apply lip synchronization and adjust the lip movements.

Click to open the **Face Key Editor** panel. Please refer to the [Using the Face Key Editor](#) section for more information.

B. Clip Editing Tools



- 1 [Function](#)
- 2 [Loop](#)
- 3 [Speed](#)

Click to show the clip editing drop-down list.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Break	Alt+B

- The **Loop** button works to copy paste the clip data in the **Voice** and **Motion Clip** tracks only.
- Click and drag the clip's right edge rightward to repeat the clip.
- The **Speed** button works to change the speed of the clips in the **Voice** and **Motion Clip** tracks only.
- Click and drag the clip's right edge rightward/leftward to decelerate/accelerate the speed.

C. View & Playback Control



- 1 **Zoom in/out (+, -)**
Actual Size
Fit to Window
- 2 **Play and Stop**
- 3 **Time Mode Switch**
- 4 **Current Frame**
- 5 **Auto Hide Playbar**

- Click the **Zoom in** button (Shortcut: + or Shift + "=") to increase the time (cell) unit size.
- Click the **Zoom out** button (Shortcut: -) to decrease the time (cell) unit size.
- 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.
- 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.

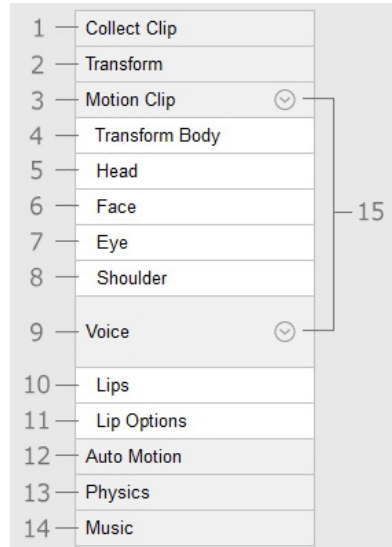
Click the **Time Mode Switch** button to switch between the **Real-time** and **By Frame** modes for simulating physics. (for 3D actor only)

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.

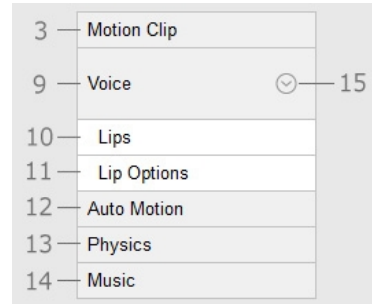
Click the **Auto Hide Playbar** button to show / hide the [Play Bar](#).

D. Tracks

Timeline PRO



Timeline Standard



1 **PRO** **Collect Clip**

Click and drag to include a range in which the desired motion clips or voice scripts exist.

2 **PRO** **Transform**

Shows the actor transformation keys. You may use the transform tools on the [Left-side Toolbar](#) to set the transformation keys.

3 **Motion Clip**

Shows the applied motion clips. You may also click the **Face Puppet** button to record a motion clip.

4 **PRO** **Transform Body**

Shows the transform body keys. You may double-click elsewhere on the track to set the transform body keys.

5 **PRO** **Head**

Shows the head motion keys. You may double-click elsewhere on the track to set the head keys.

6 **PRO** **Face**

Shows the facial expressions keys. You may double-click elsewhere on the track to set the face keys.


7 **PRO** **Eye**

Shows the eye motion keys. You may double-click elsewhere on the track to set the eye keys.

8 **PRO** **Shoulder**

Shows the shoulders motion keys. You may double-click elsewhere on the track to set the shoulder keys.

9 **Voice**

- Shows the representative clips containing voice and lip keys. You may freely edit the clip such as [looping](#), [changing speed](#) or [breaking](#).
- 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** and **Lip Option** tracks.

10 **Lips**

Shows the lip-synching keys. You may double-click elsewhere on the track to set the lip keys.

11 **Lip Options**

Right-click in a range within the voice clip to open the **Lip Options** panel.

12 **Auto Motion**

Shows the applied auto motion or idle motion. Auto motions can be operated into two modes: **Talk Mode** and **Listen Mode**.

13 **Physics**

Shows the recorded physics data from the **Atmosphere Setting** panel (for 3D Actor only).

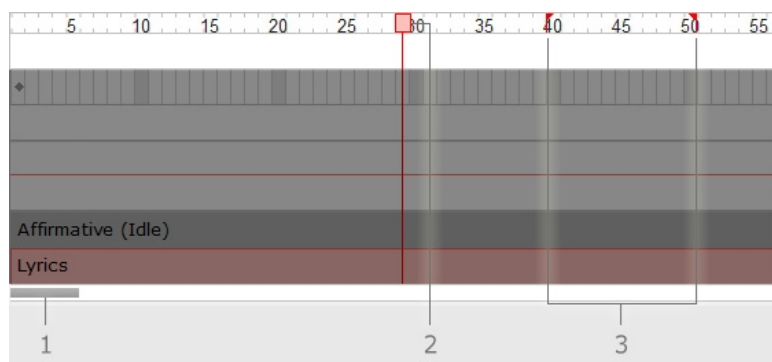
14 **Music**

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

15 **Sub-track Display**

Shows sub tracks for further editing.

E. Time Scrub



1 Time Unit Bar

- Drag the bar to move the displayable range to a desired time frame.
- Drag the right edge to change the size of the displayable range.

2 Play Head

Drag to move to the desired time frame.

3 Playback / Export Range

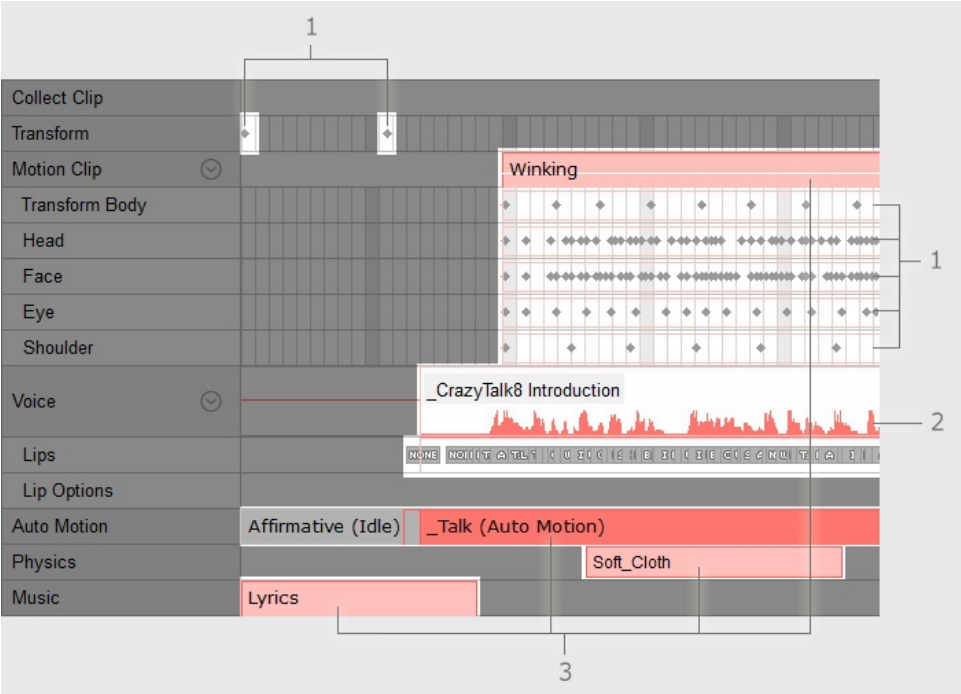
Use the flags to determine the range for playback and export videos.

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 - Key, Wave, and Clip**.



Data Name	Descriptions
1 Key	Animation Keys store Lip-synching , and Head, Face, Eye, Shoulder motion data for the actor.
2 Wave	Audio Waves store audio data for the actor.
3 Clip	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.

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 red.
- **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 ⌘ + LBM (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.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Break	Alt+B

Cut

Select the **Cut** command, or use hotkey ⌘ + X to cut the target key or clip in the clipboard.

Copy

Select the **Copy** command, or use hotkey ⌘ + C to copy the selected keys or clips.

Paste

Select the **Paste** command, or use hotkey ⌘ + V to paste single or multiple keys or clips, to the target frame.

Delete

Select the **Delete** command, or use hotkey fn + 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
-------------	---	----------------
- 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.


Motion Clip	⌵	Rolling Eyes_A
Auto Motion		Default_Talk2D mode (Auto Motion)



Motion Clip	⌵	
Auto Motion		Auto Motion (Auto Motion)

Actor with auto motion only

Motion Clip	⌵	Angry
Auto Motion		Auto Motion (Auto Motion)



The motion clip takes over the priority from the auto motion

Clip Editing

Saving Data From Tracks to Different Libraries

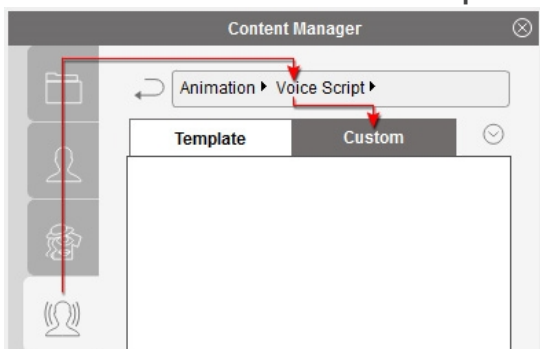
After you are satisfied with your project, you are then able to save the motion data from the tracks to different libraries as templates so that you may re-use them in any future project.

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

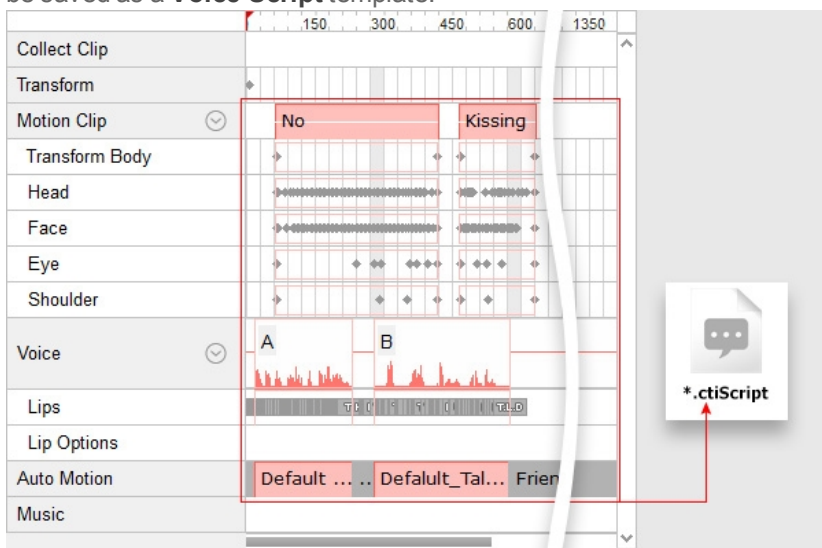
Saving Voice Script

Compacting Complete Script Data of Entire Project

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

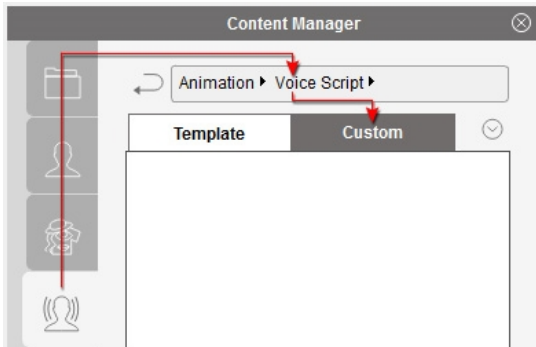


2. Select *multiple or none* of the clips in the **Voice** track.
3. Click the **Add** button under the **Content Manager**.
4. The data (in the entire project) from the **Voice**, **Lips**, **Motion Clip** (sub-tracks included) and **Auto Motion** tracks will be saved as a **Voice Script** template.

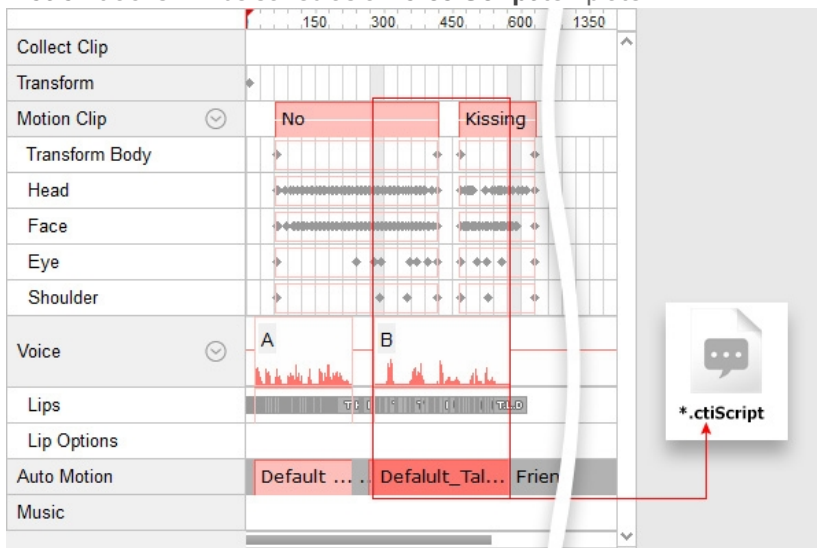


Saving Single Script Data

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



2. Select *one* target clip in the **Voice** track.
3. Click the **Add** button under the **Content Manager**.
4. The data (within the range of the selected clip) from the **Voice, Lips, Motion Clip** (sub-tracks included) and **Auto Motion** tracks will be saved as a **Voice Script** template.

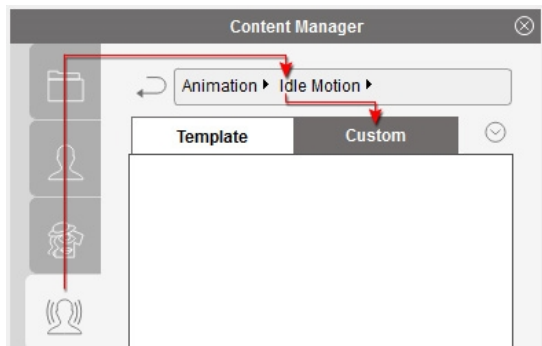


Saving Idle Motion

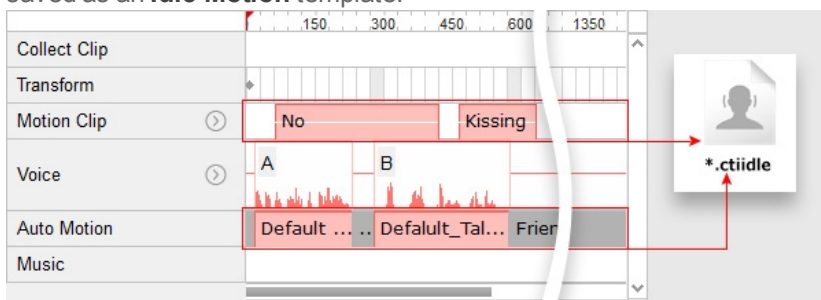
Compacting Idle Motion

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 **Animation >> Idle Motion >> Custom** library.



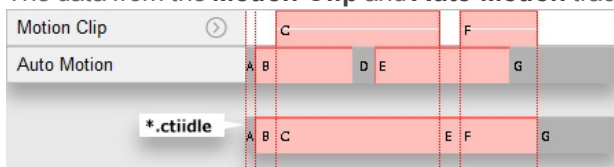
2. Click the **Add** button under the **Content Manager**.
3. The data (in the entire project) from the **Motion Clip** (sub-tracks included) and **Auto Motion** tracks will be merged and saved as an **Idle Motion** template.



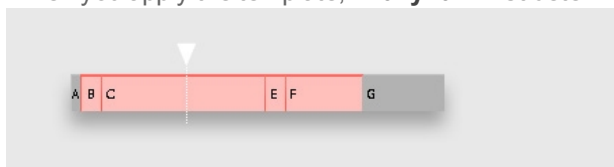
Applying Idle Motion Comprising Multiple Motion Sources

When you re-use the custom idle motion template, the start point of the idle motion will be randomly determined 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.



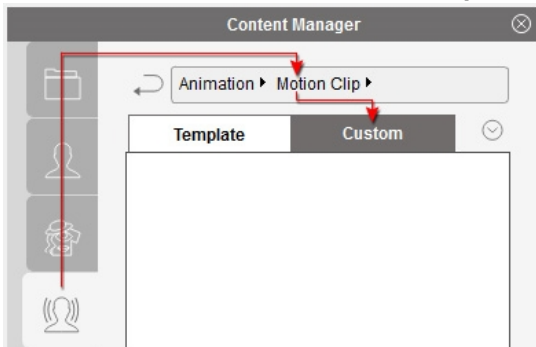
3. Then the template is applied to the **Auto Motion** track in loop.



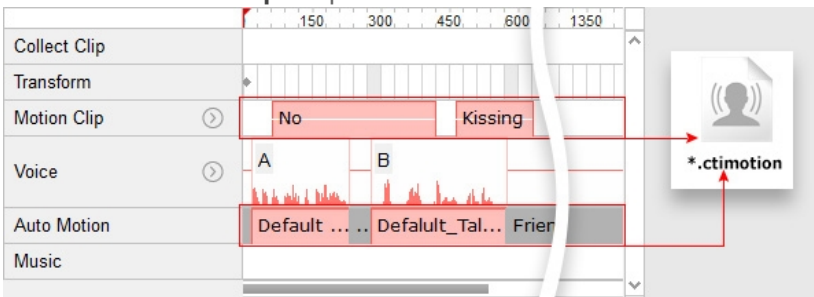
Saving Motion Clip

Compacting Complete Motion Clips of an Entire Project

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

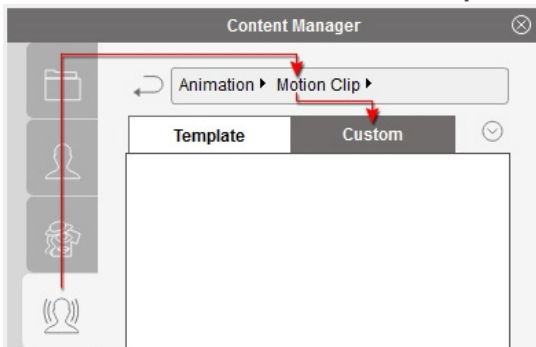


2. Select *multiple or none* of the clips in the **Motion Clip** track.
3. Click the **Add** button under the **Content Manager**.
4. The data (in the entire project) from the **Motion Clip** (sub-tracks included) and **Auto Motion** tracks will be merged and saved as a **Motion Clip** template.

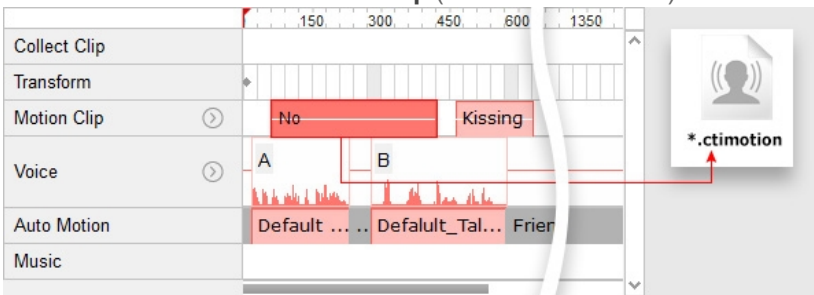


Saving Single Motion Clip

1. Switch to the **Animation >> 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.

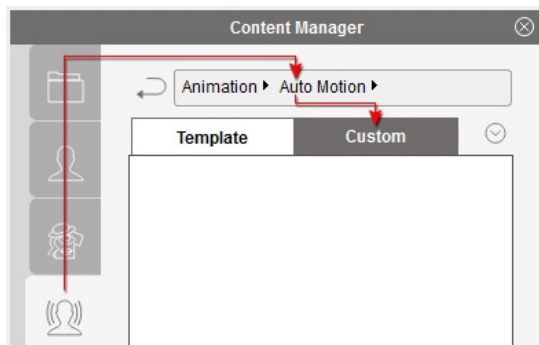


Saving Auto Motion Profile

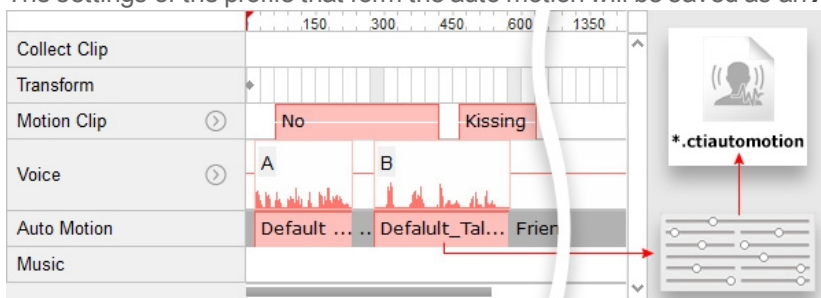
Since the auto motion data in the **Auto Motion** track is the result of the response to the loaded sound in accordance with the setting in a provided profile, when you save the data to the template library, you are actually saving the settings of the profile instead of the motion itself.

Saving Auto Motion Profile to Custom Library

1. Switch to the **Animation >> Auto Motion >> Custom** library.




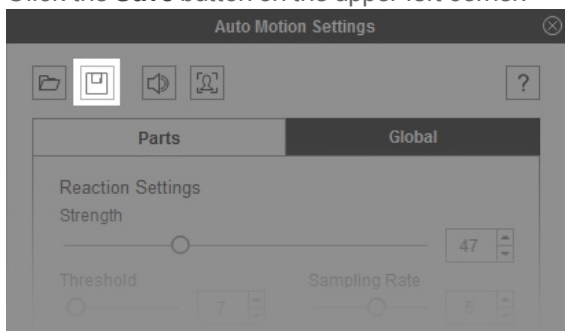
2. Select at least *one* target clip in the **Voice** track or in the **Auto Motion** track.
3. Click the **Add** button under the **Content Manager**.
4. The settings of the profile that form the auto motion will be saved as an **Auto Motion** template.



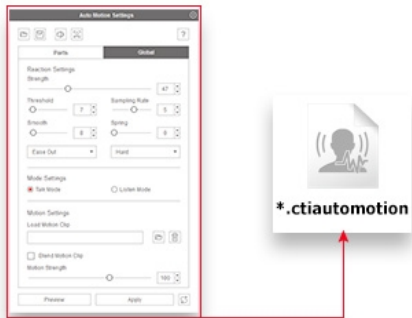
Saving Auto Motion Profile Elsewhere **PRO**

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 **Voice** 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.



Speed, Loop and Blending

In **CrazyTalk**, you may change the speed and loop status of clips in the **Voice**, **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 **Voice** (for **PRO** only), 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.




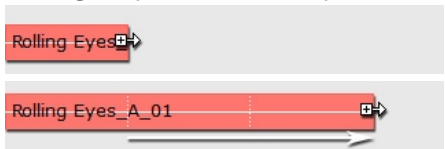
Move your cursor to the end of the clip, it will then change into a double-headed arrow.

Squeeze the clip to speed up the action.

Stretch the clip to slow down the action.

Loop

1. In the timeline, select a clip from either the **Voice** (for **PRO** only), 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.



Move your cursor to the end of the clip, it will then change into a single-headed arrow with a plus box.

Move your cursor towards the right to loop the clip.

Blending

The blending can happens 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

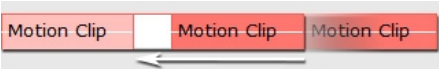
By default, motion clips will blend with the clips (auto motion or idle motion clips) in the **Auto Motion** track, which makes the transition between two motion clips smoother.



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 **Voice**, **Motion Clip** and **Music** tracks. With this feature you may extract partial clips from a very long clip and delete the redundant clips.

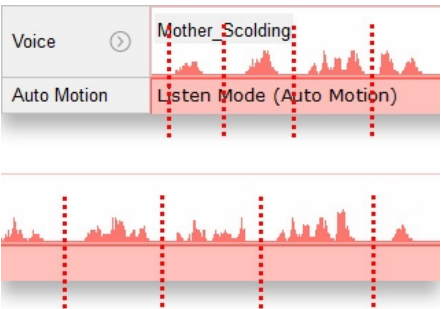
Breaking Clips in the Auto Motion Track (for **PRO** only)

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 part so that the actor can have different voice clips and responses inserted into the empty frames between two trimmed clips.

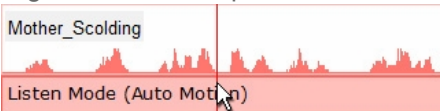
1. Apply an actor in a new project.



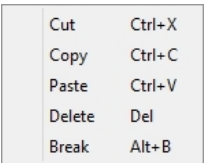
2. Add a voice to the actor in **Listen Mode**. The voice is a sound file composed of several sentences. You may observe it in the **Voice** track.



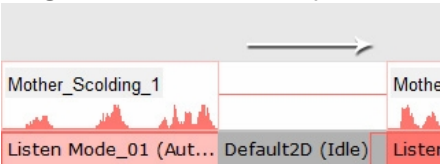
3. Right click on the clip in the **Auto Motion** track where the sound wave is flat and you want to break it.



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.



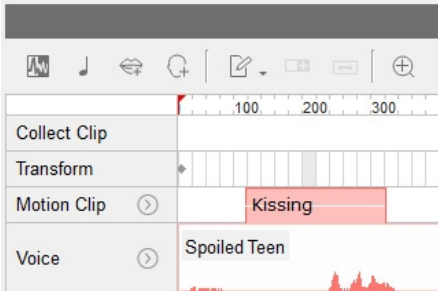
7. Apply a different [auto motion](#) to this new clip.
8. Playback the project and the actor will have new sound inserted into the original voice.

Breaking Clips in the Motion Clip Track

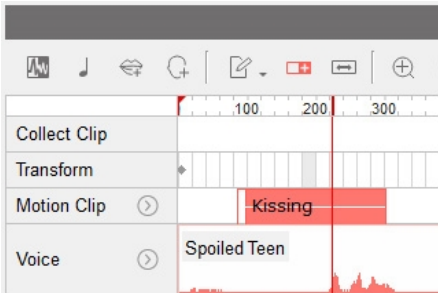
When the actor's facial motion affects the accuracy of lip-synching, then you may adjust the applied motion clip. In this example, the actor's facial motion affects the accuracy of lip-synching.



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.



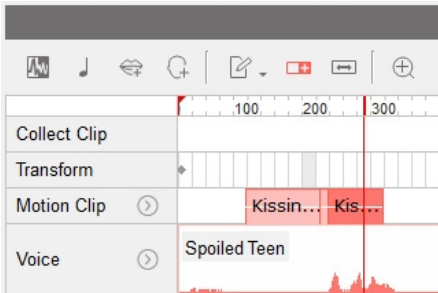
2. Drag the play head to the time frame where you need to break the clip into new clips.



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.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Break	Alt+B

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



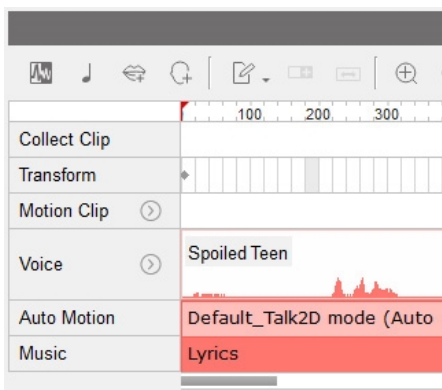
5. Playback the project and the actor's facial motion will not affect the lip-synching when talking.



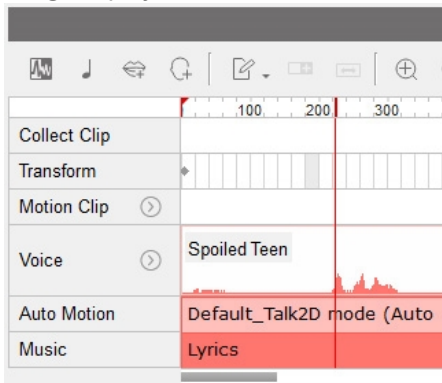
Breaking Clips in the Music Track


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.



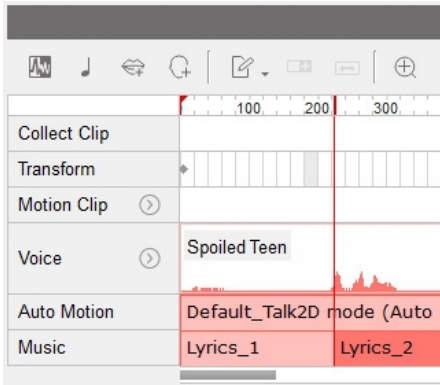
2. Drag the play head to the time frame where you need to break the clip up into new clips.



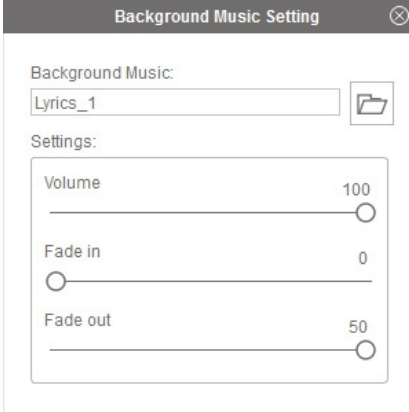
3. Click the **Function**  button on the **Timeline** toolbar, and select **Break** from the clip editing drop-down list. You may alternatively right-click on the clip and select **Break** from the pop-up menu.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Break	Alt+B

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.



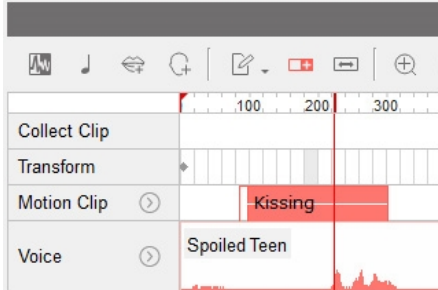
6. Playback the project and the background music will fade out at the end of the newly trimmed clip.

Transformation Track **PRO**

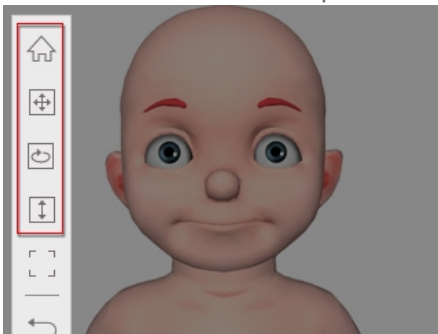
The **Transformation** track stores the transform data through the entire project. It is useful when you want the actor to be out of the scene in the very beginning of the project, or when you want the actor to have a close-up shot in a specific time frame.

Using Transform Keys

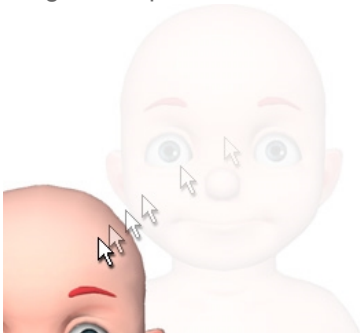
1. Add an actor and open the **Timeline**.



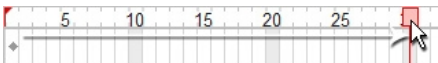
2. Move to the start frame and press down one of the transform tools (in this case, the **Move** tool is pressed down).




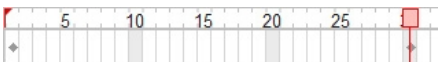
3. Drag and drop the actor out of the view window (working area).



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.



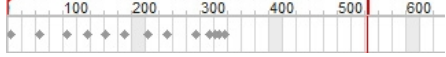
7. The actor will start to move into the scene as you play back.



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.

Using Voice Morph

To use voice morph, click the **Voice Morph**  button in the **Timeline**. The **Voice Morph** panel will then open.



The Voice Morph panel is a window with a title bar that says "Voice Morph" and a close button. It contains four sections, each with a checkbox and a slider:

- ☐ Pitch Scale: Slider from -10 to 10, currently at 0.
- ☐ Head Size: Slider from -10 to 10, currently at 0.
- ☐ Robot: Slider from 0 to 10, currently at 0.
- ☐ Echo: Slider from 0 to 10, currently at 0.

At the bottom right is a refresh icon. At the bottom are two buttons: "Preview" and "Apply".

Follow these steps to create voice effects:

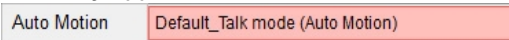
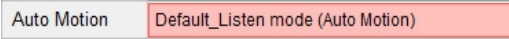
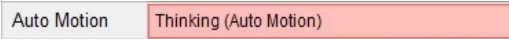
1. Optionally select the desired voice effects to be used in the script.
 - Check the **Pitch Scale** checkbox and move the corresponding slider to specify the pitch of the voice.
 - Check the **Head Size** checkbox and move the corresponding slider to adjust the resonance frequencies.
 - Check the **Robot** checkbox and move the corresponding slider to add a robotic voice effect.
 - Check the **Echo** checkbox 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 the audio driven motion for the voice clip. 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:

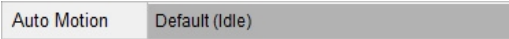
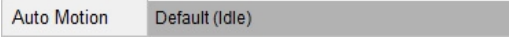
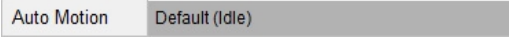
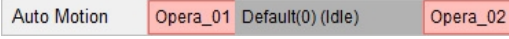
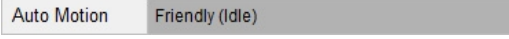
- When [loading an audio data](#) and selecting **Talk Mode** as the default auto motion, the motion pattern will be automatically applied to the actor.

- 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 **Animation** tab, and apply a template from the **Auto Motion >> Functional** or **Scenario** library.


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.

- Click **File >> New Script** to clear all the data in tracks and start a new script.

- When the Auto Motion clip breaks into two parts, the empty slot between them will be filled up with idle motions.

- Switch the **Content Manager** to the **Auto Motion** tab, and apply an idle template from the **Idle** library.


Note:

[Download and install the bonus pack](#) from the official web site, to get more idle motion styles.

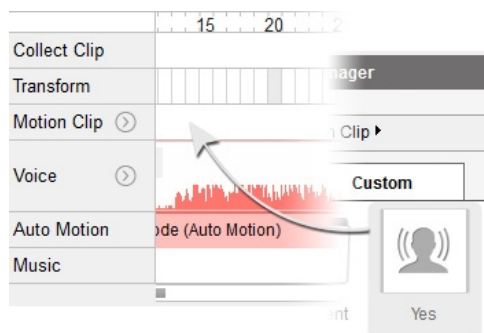
Motion Clip Track

Applying and Creating Motion Clip Templates

After an **Auto Motion** is applied to the actor, users can then overlap the actor's motions with ready-made, or custom motion clips which are stored in clip forms inside the **Motion Clip** track.

Applying Motion Clips

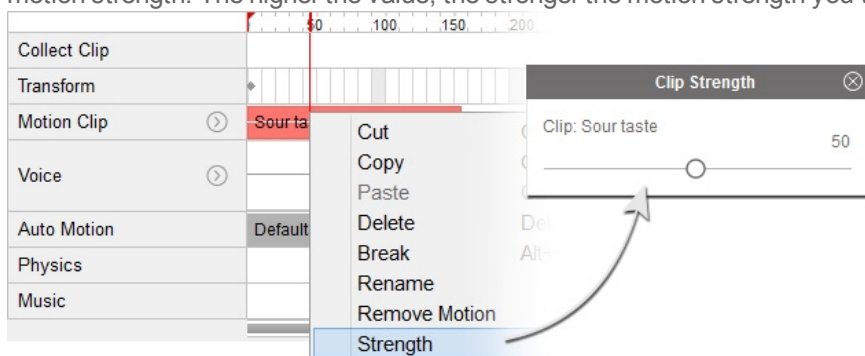
When you apply a motion clip template, the data will be stored in the **Motion Clip** track.



Adjusting the Strength of Motion Clips

You can create more exaggerated expressions for cartoon characters, or create moderate expressions for real human actors by adjusting the strength of each motion clip through one of the following methods:

- Right-click on the motion clip and select the **Strength** command, then drag the **Clip Strength** slider to modify the motion strength. The higher the value, the stronger the motion strength you will get and vice versa.

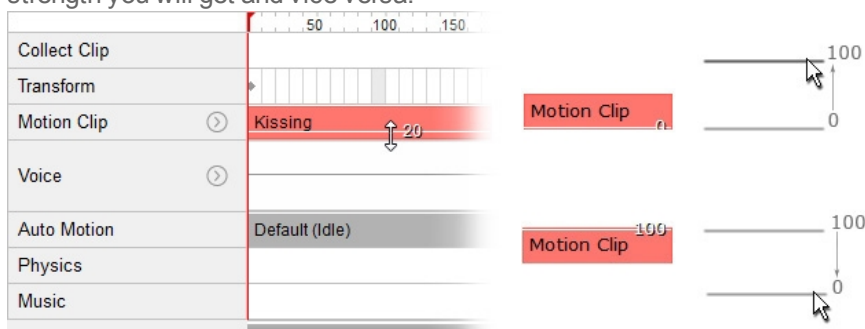


Clip Strength = 20

Increase the **Strength** value for a cartoon character.

Clip Strength = 80

- Directly drag the horizontal yellow line across the entire motion clip to modify the motion strength. A percentage value will be displayed when dragging the line up/down over the timeline. The higher the value, the stronger the motion strength you will get and vice versa.



For the ease of adjustment within the confined space of the clip, you can also drag the horizontal line up/down within two times the height of the motion clip.

Clip Strength = 50

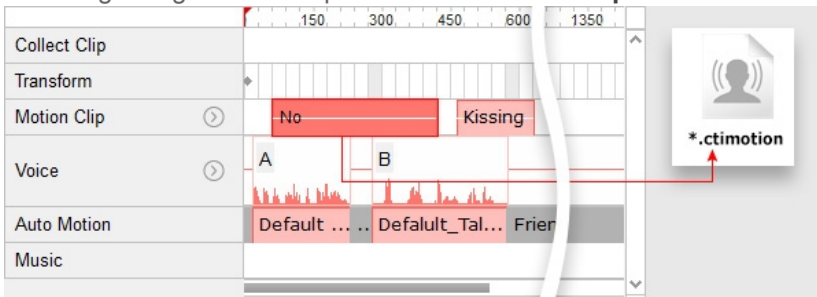
Decrease the **Strength** value of the existing motion clip designed for a cartoon character in order to create more subtle, human expressions.

Clip Strength = 20

Creating Motion Clip Templates

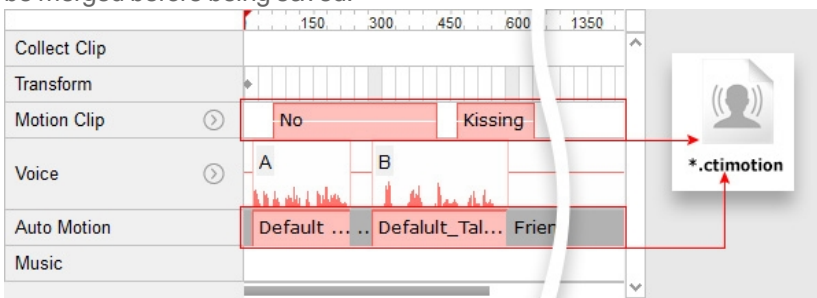
If you wish to create a custom motion clip from the current project, then the data saved in the custom library may vary depending on the following situations:

- Selecting a single-motion clip: Data in the **Motion Clip** track will be saved alone.



Clip 01 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.



Clip 01, 02, 03 as well as the Auto Motion will be merged before being saved.

Note:

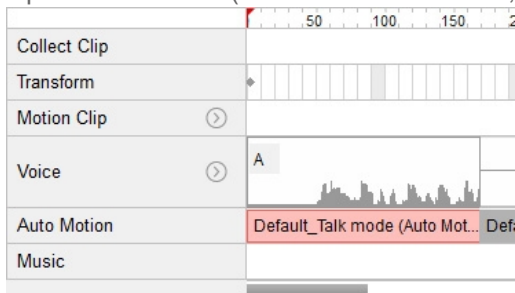
The data structure of a custom script is a bit different. You may refer to the [Using Talking Scripts](#) section for more details.

Extracting Motion Clip from Auto Motion **PRO**

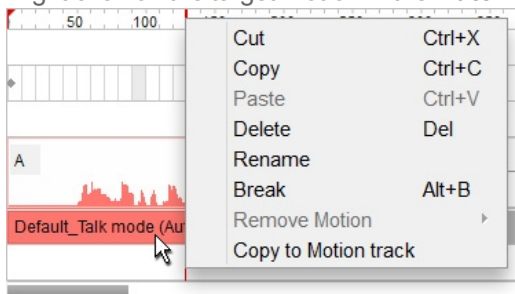
In addition to using the [Puppeteering](#) method to create motion clips, you are able to extract motions from an auto motion clip to generate a motion clip.

Extracting Motion Clip from Auto Motion

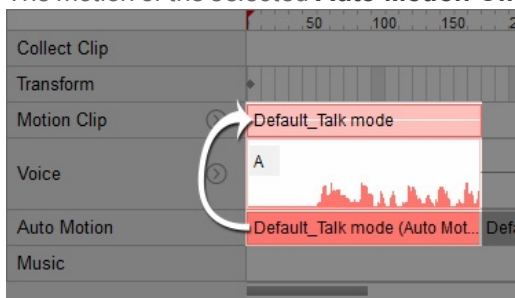
1. Make sure you have an actor already.
2. Add a voice to the character. You may determine if the voice is applied with either [Talk mode or Listen Mode](#).
3. Open the **Timeline** (Shortcut: Windows - F3; Mac - fn + F3).



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.

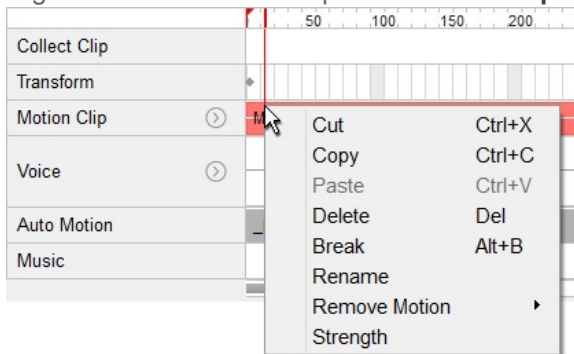
Removing Partial Motions

1. Add a motion clip to the actor.

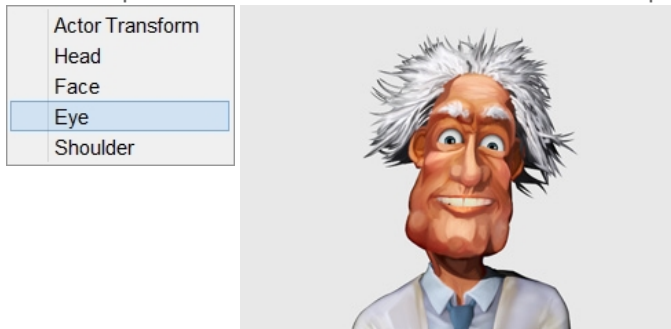


The motion clip affects the actor's **Head**, **Eye**, **Face** and **Shoulder** motions.

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.

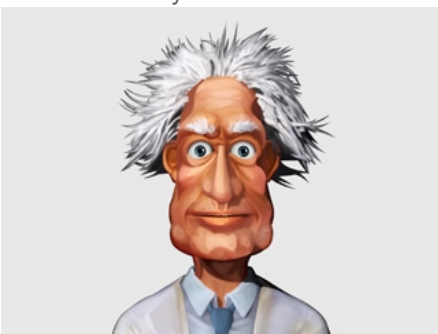


4. Choose a part in the sub-menu so that the motion of that part in the clip will be removed.



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.

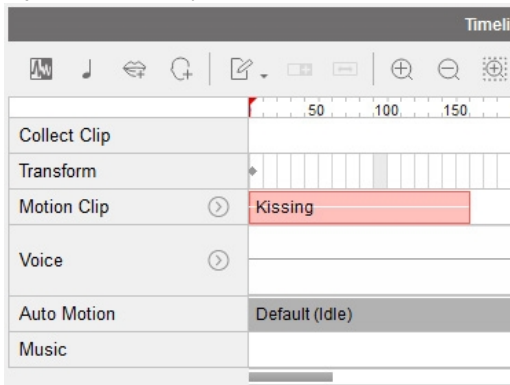


Using the Face Key Editor **PRO**

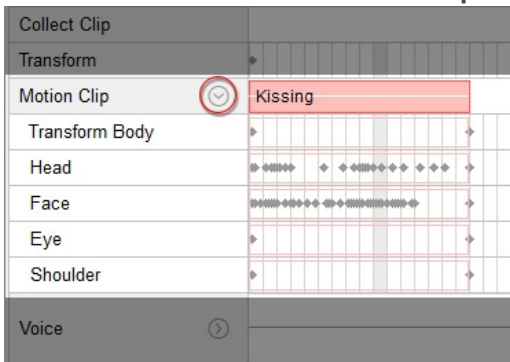
CrazyTalk integrates various key-editing panels into one single **Face Key Editor**. Use it to add/modify keys for **Face**, **Head**, **Eyes** and **Shoulders** tracks.

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).

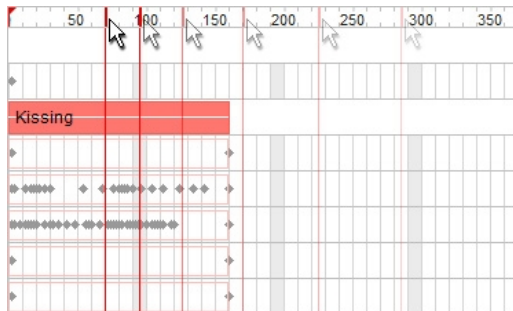


3. Click the arrow button of the **Motion Clip** track to show its sub-tracks.

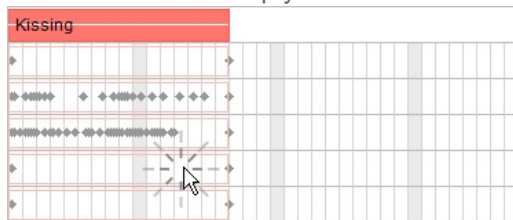


4. Display and activate the **Face Key Editor** panel.

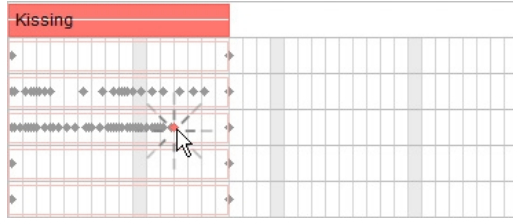
- Move the **play head indicator** within the range of an existing **Motion Clip** and click the **Face Key Editor** button on the tool bar of the **Timeline**.



- Double-click on an empty frame in one of the sub-tracks to display the **Face Key Editor** for adding a new key.



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



Note:

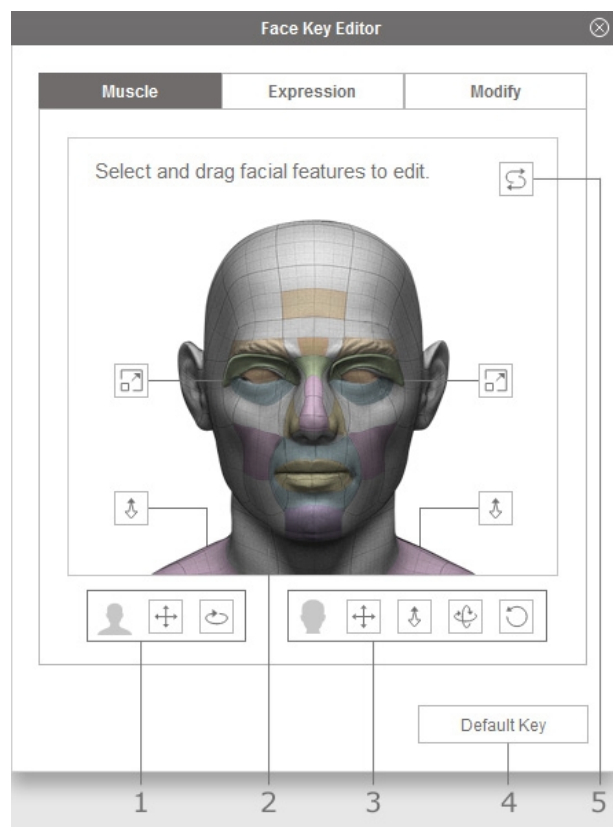
- If the current time is not within the range of a **Motion Clip**, then even if the **Face Key Editor** displays, will be disabled.
- Please refer to the sections below for more information about using the **Face Key Editor**:
 - [Introducing the Face Key Editor](#)
 - [Setting the Head Keys](#)
 - [Setting the Face Keys](#)
 - [Setting the Eye Keys](#)
 - [Setting Default Key](#)

Introducing the Face Key Editor **PRO**

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: **Muscle**, **Expression**, and **Modify**.

Muscle Tab



1. Add/Modify Transfrom Body Key
2. [Solo Feature Selection](#)
3. [Add/Modify Head Key](#)
4. [Default Key](#)
5. Clear Selection

Select to move / rotate the actor.

Select to highlight the desired features and convert the changes into keys.

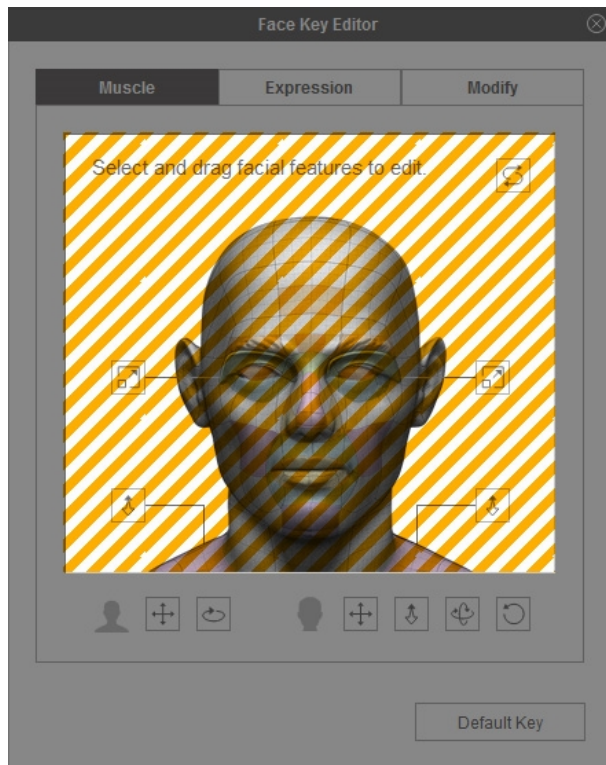
Select to rotate / tilt / move the head.

Click to set keys and neutralize all adjustments made to facial features.

Deselect all features.

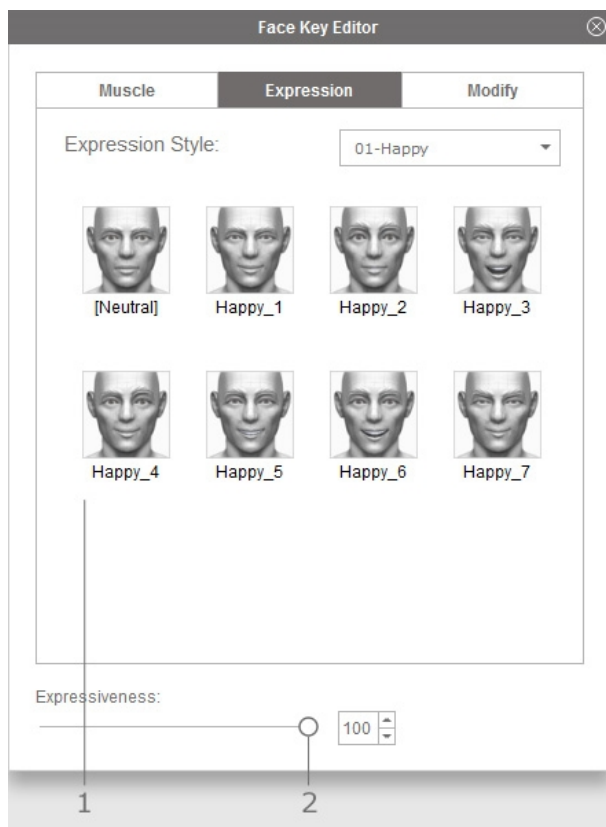
The Interactive Area

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.



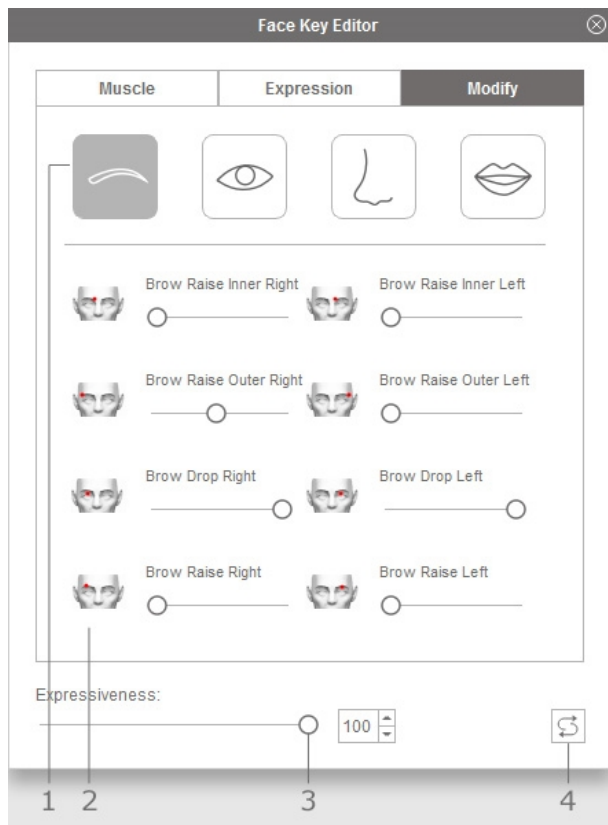
1. Select one or more solo features from the **Solo Facial Feature Pane**.
2. Move your mouse cursor into the interactive area.
3. Drag from the interactive area to elsewhere in your display to automatically add or edit a key.

Expression 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



1. Facial Feature Buttons
2. Solo Feature Strength
3. Expressiveness
4. Reset

Click these buttons to show sliders under each facial feature.

Drag the sliders in this pane to set a key to the individual facial offset features.

Drag the slider to decide the strength of the applied expression template.

Click this button to retrieve the initial status of the sliders.

Setting the Head Keys **PRO**

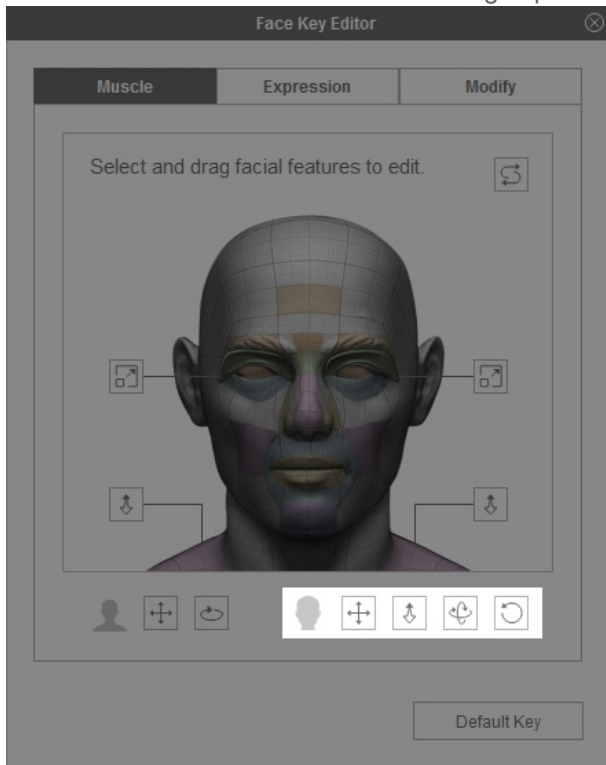
Using the **Face Key Editor**, you can set or modify the rotation / tilt / movement of the actor's head.

Setting the Head 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 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 right



Drag mouse right



Drag mouse up



Drag mouse down

- Head Front and Back



Drag mouse left



Drag mouse right

Setting the Face Keys **PRO**

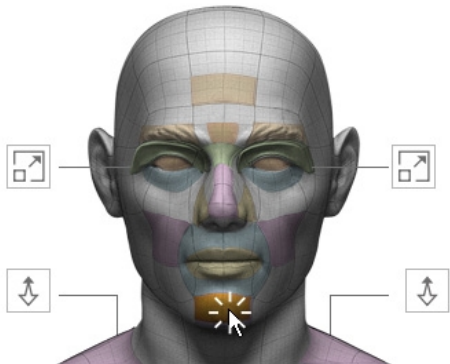
There are three methods for adding or editing a facial key. By manually setting the facial keys in a motion clip, you are able to create more dramatic facial expressions in a specific time frame.

Using the Muscle 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.



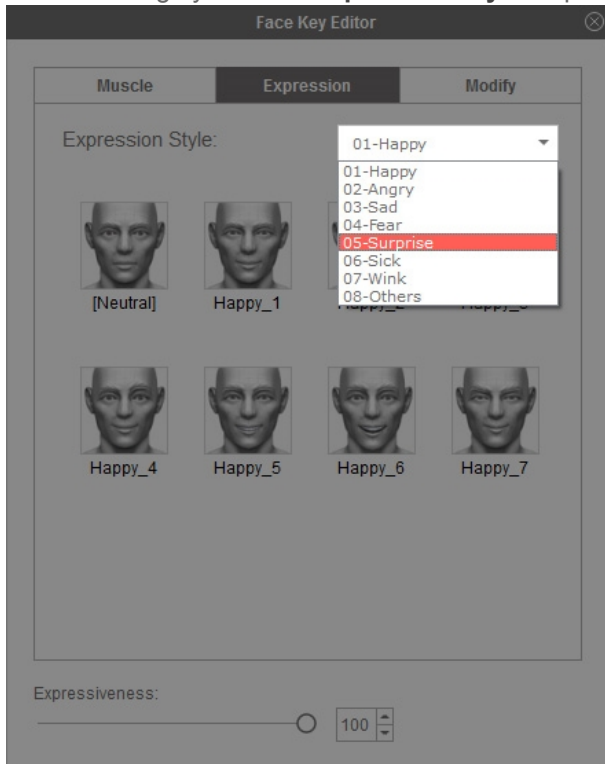
You may pick multiple facial features to simultaneously move them.



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



3. In the **Expression** 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

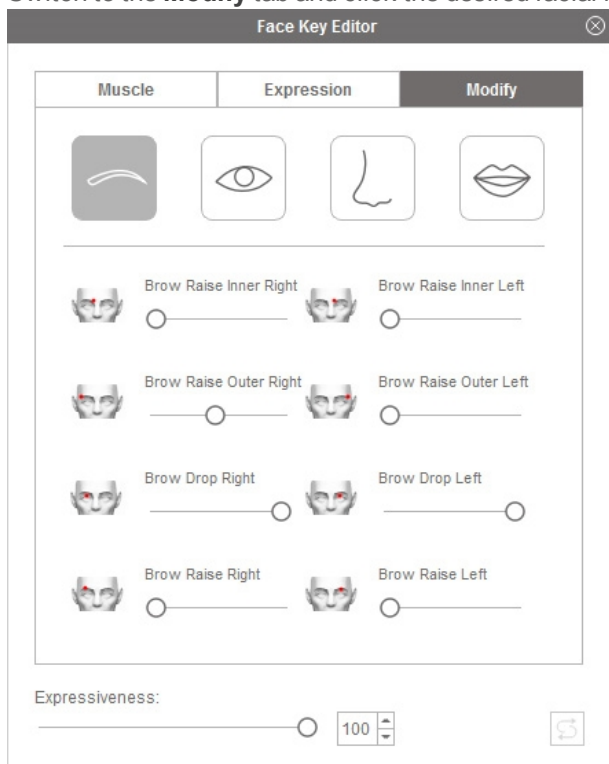


Expressiveness = 80

Using the Modify Tab

If you use the **Muscle** 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 and click the desired facial feature button.



2. Drag the slider to change the value, the selected character will then change the facial expression accordingly.



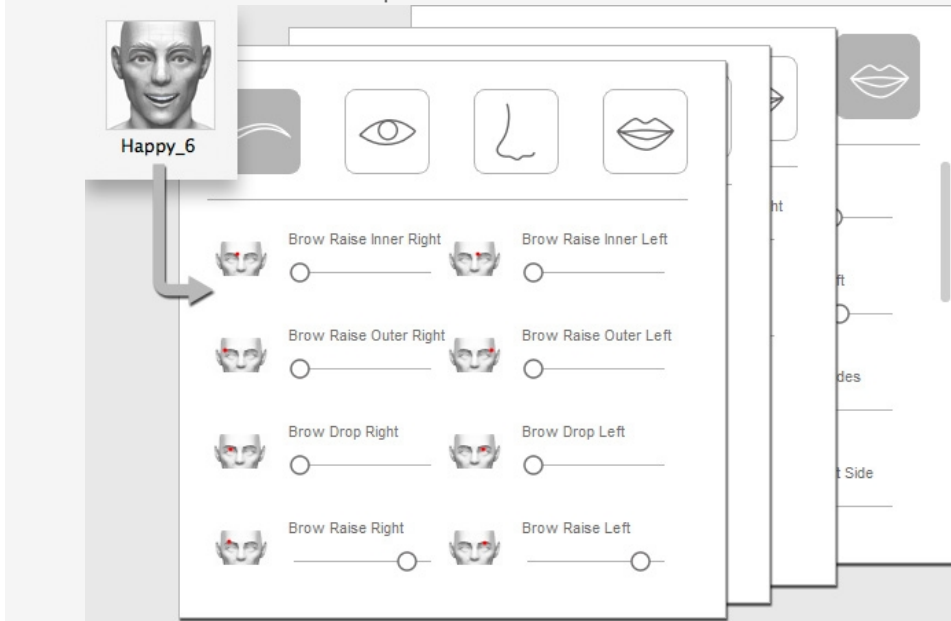
Nose Scrunch is set to minimum.



Nose Scrunch 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 **PRO**

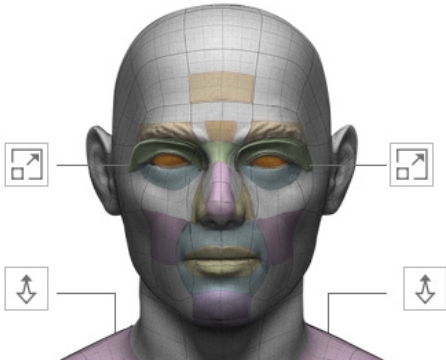
Any **CrazyTalk** actor can roll its eyes with facial animations, which is pretty cool and can contribute to a number of realistic expressions. By changing the size of the eyeballs, the facial expression can become more dramatic.

Setting the Eye Keys

- Make sure you have prepped an actor and the current time frame is [within an existing motion clip](#). Launch the **Face Key Editor**.



- Select the **Eyes** in the pane.



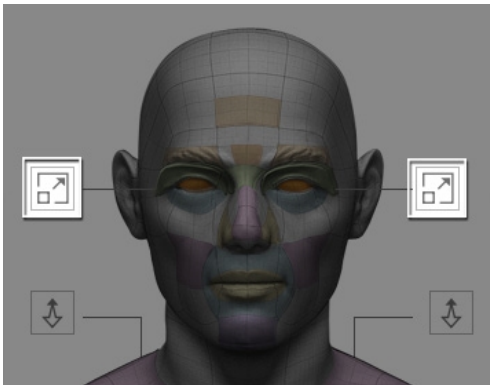
- If you are using the mouse as your input device, then press and hold the left-mouse button inside the [interactive area](#).

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.



Move the eyeballs around to create different expression results.

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 Shoulder Keys for 3D Actor (New for Version 8)

Any **CrazyTalk** actor can move its shoulders, which can greatly enhance its expressions. By moving the shoulders forward or backward, body of the character can be triggered to move as well. You can use shoulder keys to turn the actor even more than you can do with the **Rotate** tool on the stage.

Tilting Actor with Shoulders

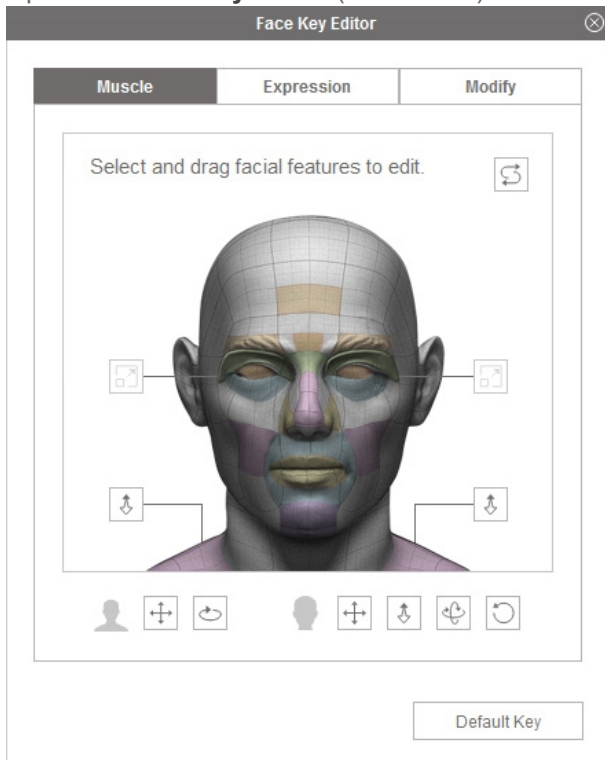
1. Create a project.



2. Optionally transform the actor, do remember to turn it to a specific direction.



3. Open the **Facial Key Editor** (Shortcut: **K**).

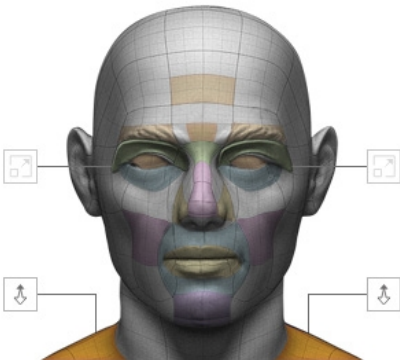


4. Optionally assign a expression key to the actor.



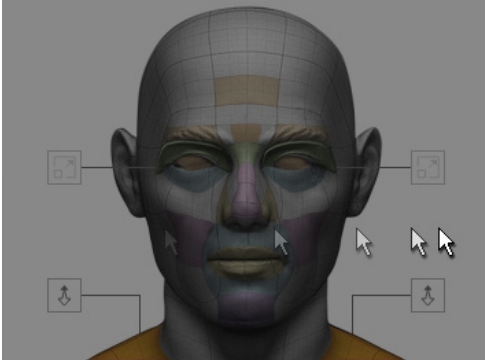
5. Select the either one or both shoulder areas in the dummy pane.

Select and drag facial features to edit.



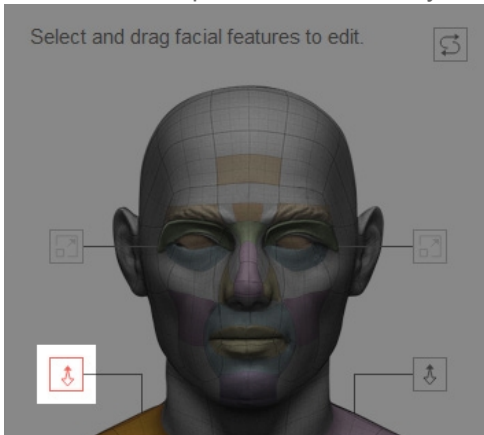
6. Drag the mouse horizontally within the dummy pane to tilt the actor.

Select and drag facial features to edit.

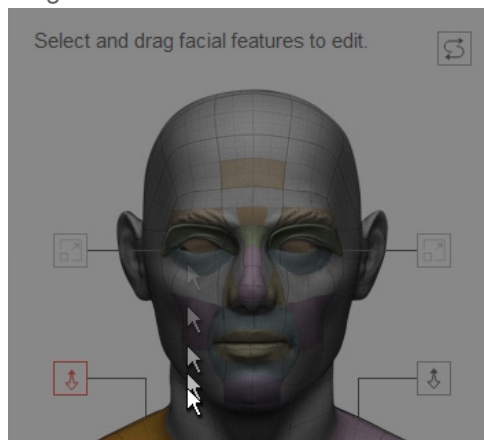


Turning Actor with Shoulder Keys

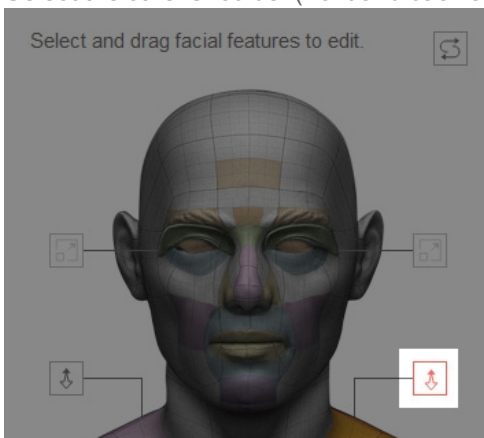
1. Follow the example above, select only the right shoulder (front and back area) in the dummy pane.



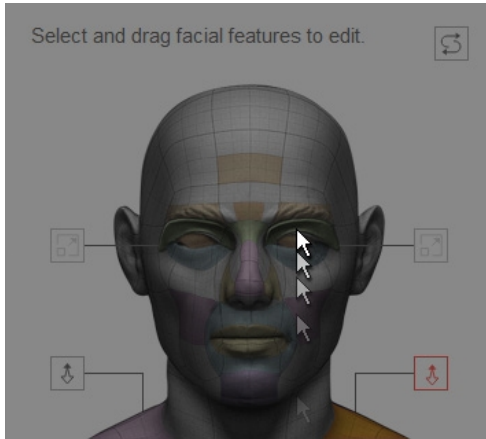
2. Drag down the mouse cursor within the dummy pane to move the shoulder forward.



3. Clear the selection.
4. Select the other shoulder (front and back area) in the dummy pane.



5. Drag the mouse cursor up to push the shoulder back.



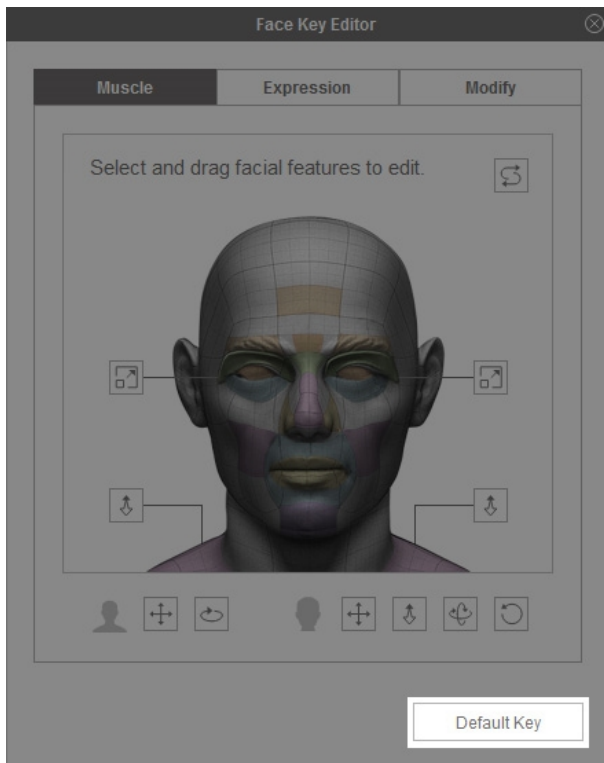
6. Optionally move the head forward, the actor then turns more to the desired direction.



7. If you set the shoulder keys in different time frame, then the actor will start to perform an eavesdropping motion.

Setting the Default Key **PRO**

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

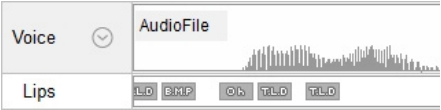
CrazyTalk provides special lip synchronization tools to make sure that the lip movements match the words being spoken by the virtual actor. A viseme is a generic facial image that can be used to describe a particular sound. It is the visual equivalent of a phoneme, or a unit of sound in a spoken language. Using visemes, **CrazyTalk** provides lip synchronization which can later be adjusted for different sounds as required.

The lip-synching keys are stored in the **Lips** track, which belongs to the **Voice** track. You may open it by clicking the  button in the **Voice** track.


Audio Track and Lips Track

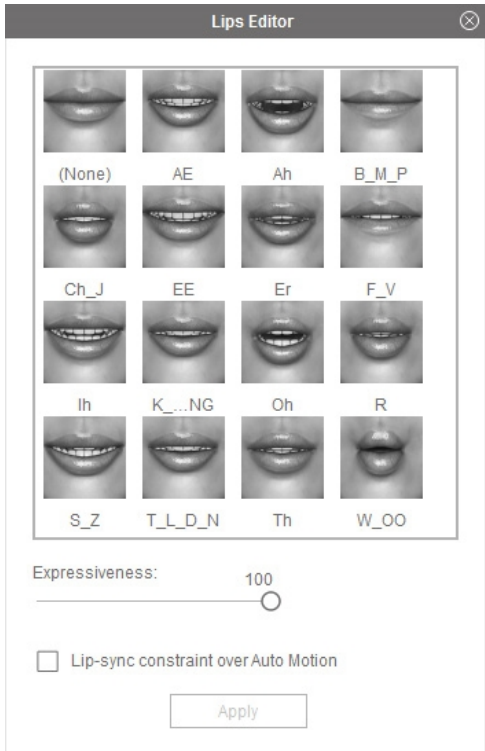
The **Voice** track stores the audio file from the **Import Audio**  panel or the **Voice Script Library**. The audio data is displayed in a wave form. You may double-click anywhere on the track to load an audio file.

Click the  button on the **Voice** 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.



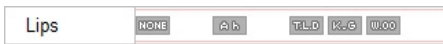
Adding or Modifying Lip-sync Keys

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 Editor** panel, click the **Lips Editor**  button in the **Timeline**.



Adding Lip-sync Keys

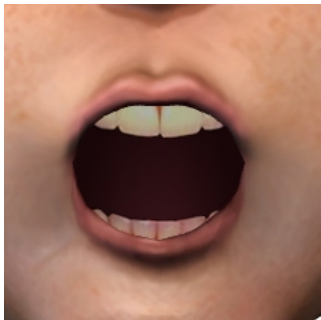
You may double-click anywhere on the **Lips** track to synchronize the lip movements in the **Lips Editor** panel.



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.



"Ah" sound applied
Expressiveness = 50

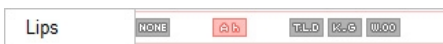


"Ah" sound applied
Expressiveness = 100

Modifying Lip-synced Keys

You may move the lip-synced keys to other parts of the script as desired, or use the [data editing tools](#) to duplicate the lip movements.

To modify a lip-synced key, double-click on the target key to adjust the lip-synching settings in the **Lips Editor** panel.



Constraining Lip-sync

Sometimes the **Auto Motion** may affect the accuracy of the lips shape. You may follow the steps below to force the lip movements to sync with the sound.

1. Given the settings in **Auto Motion** change the original lips shape when pronouncing the sound "B".



The lips shape is affected by the **Auto Motion**. When the jaw moves down, the lips shape is not correct for a "B" sound.

2. Double-click on the lip key "B.M.P" to access the **Lips Editor** panel.



3. Drag the **Expressiveness** slider to enhance the result if necessary.
4. Activate the **Lip-sync constraint over the Auto Motion** option.

☒ Lip-sync constraint over Auto Motion

Apply

5. Click the **Apply** button to blend the lip keys you have modified with the entire Auto Motion for a more accurate animation result.



After modification, the lips shape is constrained for the "B" sound.

Note:

- Once you click the **Apply** button, all of the lip keys in the Auto Motion clip will be affected. You may alternatively click the **Apply** button in the [Auto Motion Settings panel](#) for the same result.
- Some visemes, such as "EE", "Ih", "Ah", "Oh", and "W_OO", will not be affected by voice strength or any adjustment in the **Auto Motion**.

Reducing Lip-sync Keys (New for Version 8)

After a talking script is applied to the actor, the mouth starts to move with different lip shapes called **Visemes**.

However, the algorithm for generating the visemes is unbiased, sometimes leading to jumpy redundancy.

With the **Lip Sync Options** panel, these jumpy issues can be resolved.

Before starting this section, you need to create a project with talking actor. Please refer to the sections below for more information about creating actor and have the actor talk.

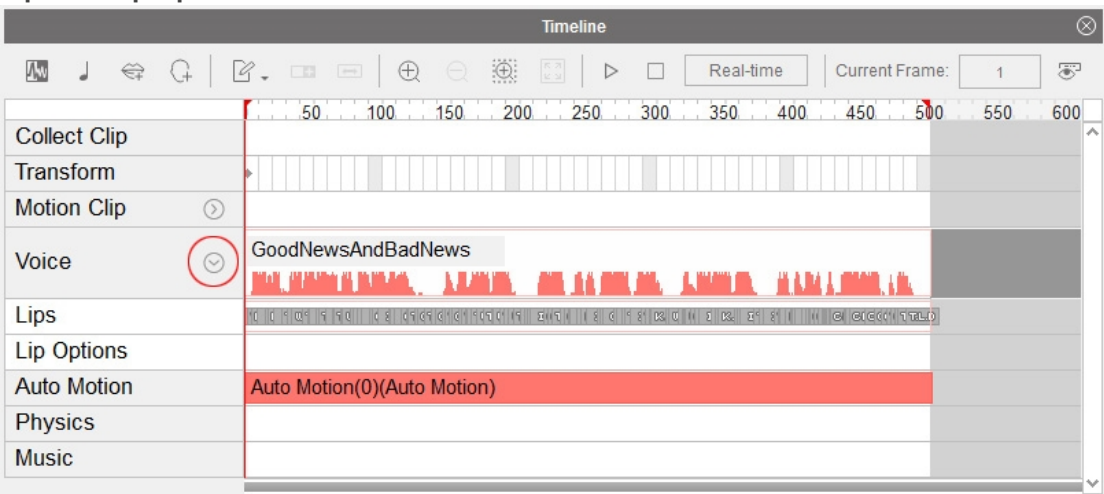
- [Creating 2D Actor](#)
- [Creating 3D Actor](#)
- [Adding Voice to an Actor](#)
- [Adding or Modifying Lip-sync Keys](#)

In order to reduce the redundant lip keys (**Visemes**), you can follow the steps below:

1. Create a project with a talking actor. Play back the project and you will see the jumpy lips when the actor is talking.



2. Open the **Timeline** panel (Shortcut Key: F3) and press the arrow button next to the Voice caption to open its sub-tracks, **Lips** and **Lip Options**.



You will see auto-generated lip-sync keys displayed on the **Lip** track. These keys are dense and redundant, which is the cause for the jumpy mouth movements.



3. Right click on the **Lip Options** track to display the right-click menu.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Lip Options	
Reduce Lip Keys	
Break	Alt+B
Rename	

4. Choose the **Reduce Lip Keys** command in the menu. The redundant keys will thus be removed.



5. Play back and the jumpy issue will be solved.

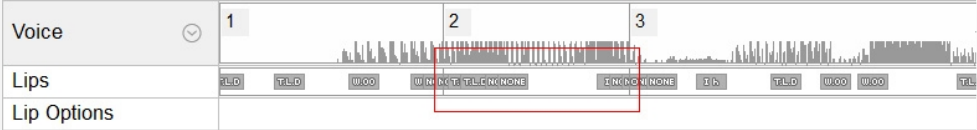


Note

If you apply multiple voice clips on the timeline, you can reduce keys on multiple voice clips by right clicking and executing this command one after another.



Right click on the voice clip timeline range in the **Lip Options** track.



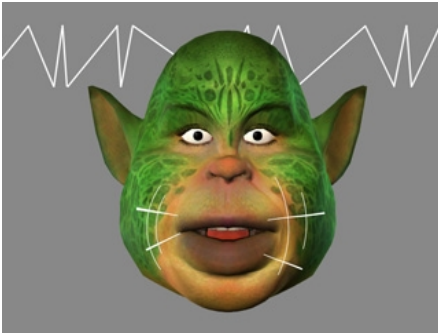
Only the lip keys within the range of the clip are reduced.

Smoothing Talking Animations (New for Version 8)

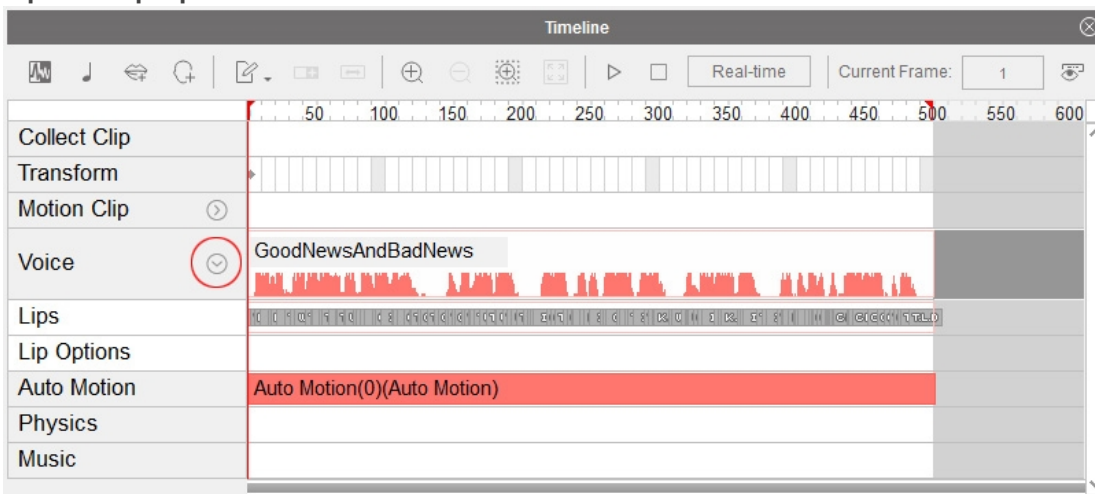
No matter if the visemes are generated automatically or manually, the bumpy movements of the mouth can be solved by [Reducing Lip-sync Keys](#). However, the transition between two keys can be still be exaggerated, which will look overly dramatic and unrealistic.

Smoothing Mouth Movements

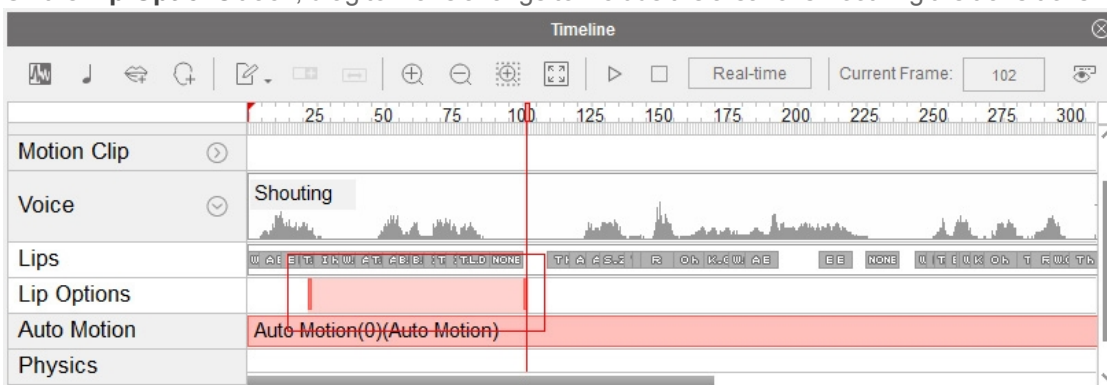
1. Create a project with a talking actor whose lip keys has been reduced. Play back the video to see the stronger mouth movements.



2. Open the **Timeline** panel (Shortcut Key: F3) and press the arrow button next to the **Voice** caption to open its sub-tracks, **Lips** and **Lip Options**.

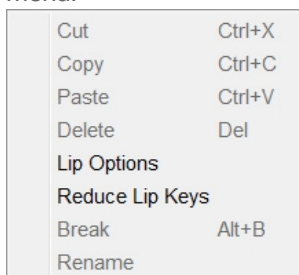


3. On the **Lip Options** track, drag to make a range to include the area for smoothing the transitions.

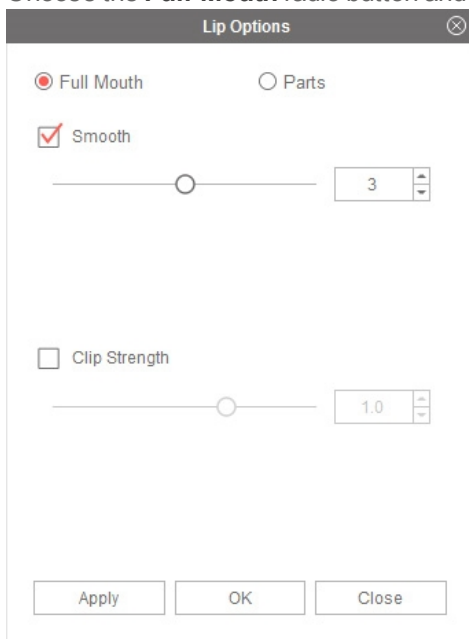


If you want to smooth the **entire** voice clip, then skip this step.

4. Right click in the range (or elsewhere in the track if you skip the previous step), select the **Lip Options** from the right-click menu.

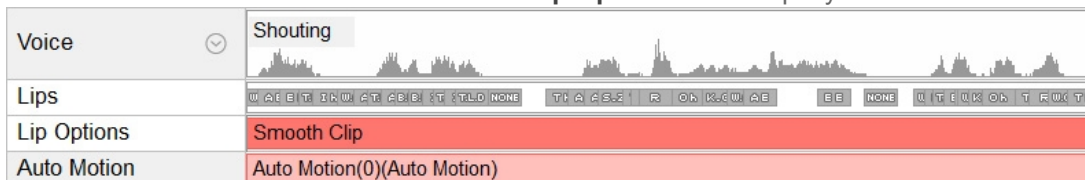


5. Choose the **Full Mouth** radio button and activate the **Smooth** box in order to enable the setting.

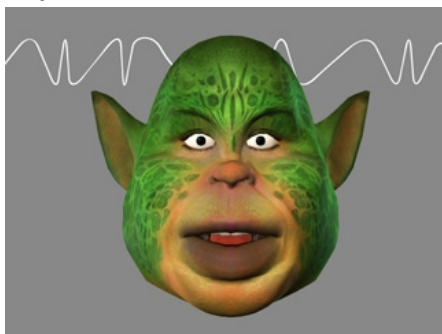


Set the smooth value and click the **Apply** button (in this case, the value is set to 5).

6. You will see the smooth effect is stored in the **Lip Option** track in clip style.



7. Play back and the mouth movements will be smoother.



Note:

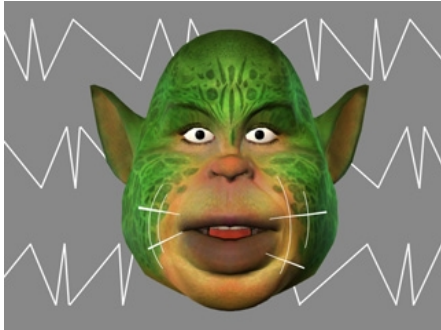
The smooth method in this page focuses on the entire mouth movements. If you want to smooth one of the elements of the mouth movements, such as the jaw, the lips and the tongue, then please refer to the [Smoothing Talking Animations by Parts](#) section for more information.

Smoothing Talking Animations by Parts (New for Version 8)

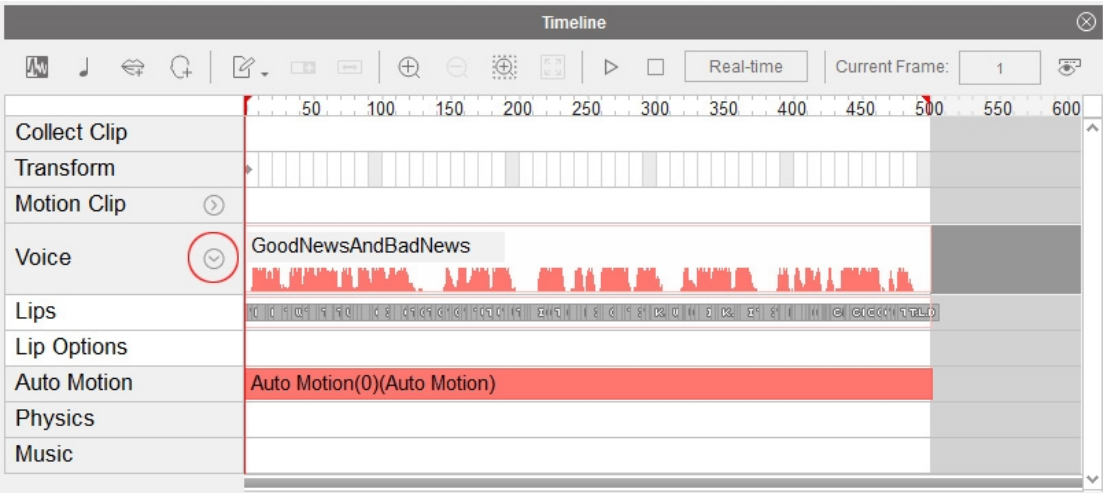
People articulate motions in different ways. By using the **Lip Options** panel, you can separately adjust the animation strength for the tongue, lips, and jaw.

Smoothing Parts

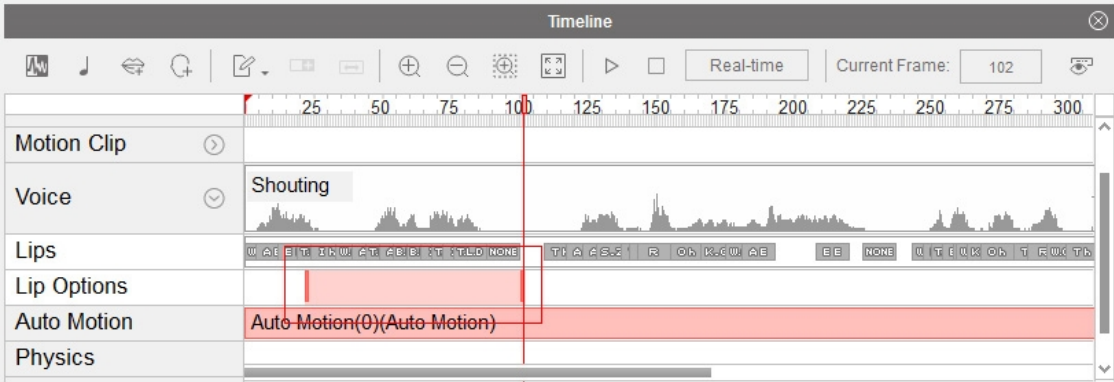
1. Create a project with a talking actor whose lip keys has been reduced. Play back the video to see the stronger mouth movements.



2. Open the **Timeline** panel (Shortcut Key: F3) and press the arrow button next to the **Voice** caption to open its sub-tracks, **Lips** and **Lip Options**.

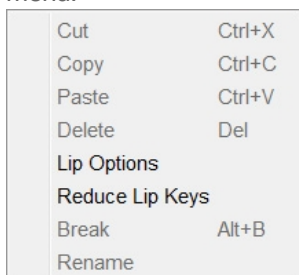


3. On the **Lip Options** track, drag to make a range around the keys for smoothing the transitions.

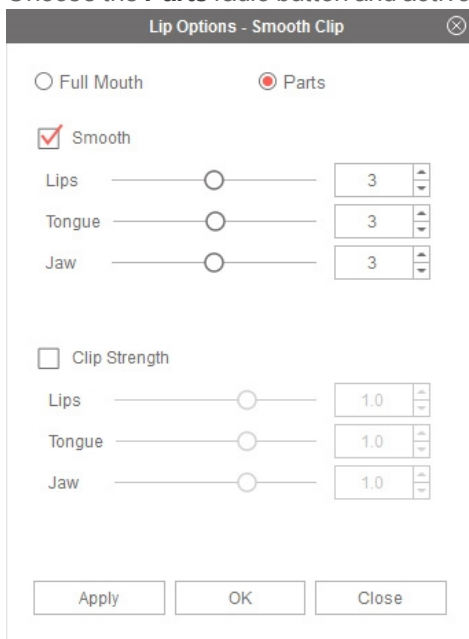


If you want to smooth the **entire** voice clip, then skip this step.

- Right click in the range (or elsewhere in the track if you skip the previous step), select the **Lip Options** from the right-click menu.



- Choose the **Parts** radio button and activate the **Smooth** box in order to enable the setting.

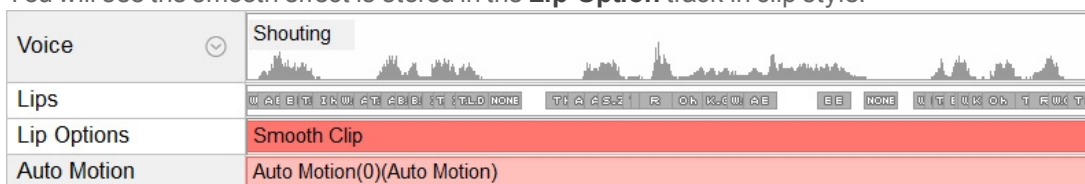


- Adjust the sliders to determine the smooth status for lips, tongue and jaw (in this case, adjust the **Jaw** slider to 5 to smooth its movements).

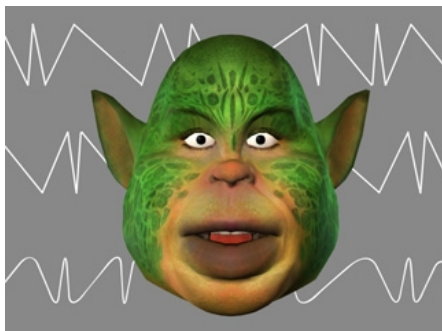


Click on the **Apply** button to accept the values.

- You will see the smooth effect is stored in the **Lip Option** track in clip style.



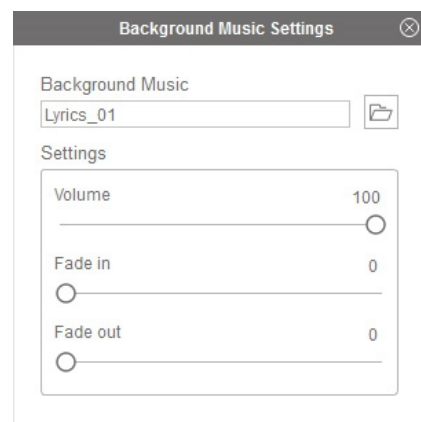
- Play back the project. Only the element that has been set will have smoother animations.



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.

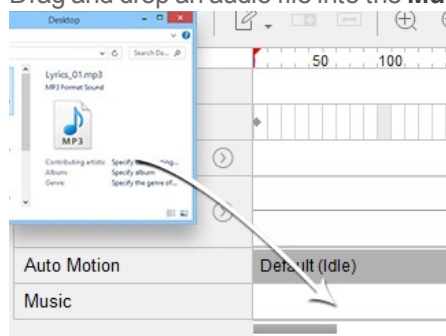
Click the **Background Music**  button in the **Timeline**, the **Background Music Settings** panel will then open.



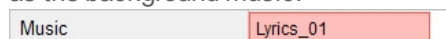
Importing Background Music

There are two methods to load the background music:

- Drag and drop an audio file into the **Music** track.

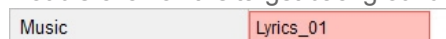


- Double-click anywhere on the **Music** track to choose an audio file in the Finder. The file will then be imported and used as the background music.



Modifying Background Music Clips

1. Double-click on the target background music clip to access the **Background Music Settings** 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	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Break	Alt+B

CHAPTER 9

Exporting

Exporting 3D Actor Head (New for Version 8)

Each 3D actor you created with **CrazyTalk** can be exported to **iClone Character Creator** for further editing. The edited character thus can be used as the character in **iClone**, a 3D animation application by **Reallusion**.

If you do not want to edit the head in **iClone Character Creator**, then you can directly import the head (in *.rlHead format) to **iClone** for generating animations.

Export 3D Head to iClone Character Creator

1. Launch **iClone Character Creator**; make sure the character is selected.



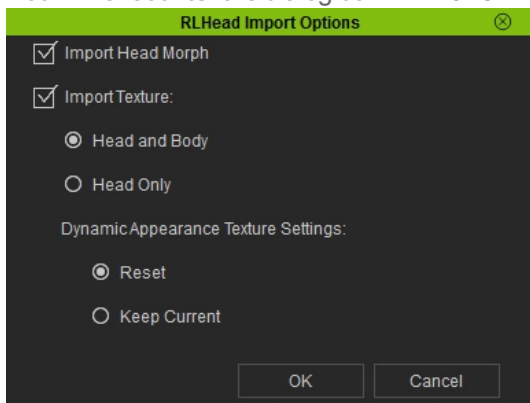
2. In **CrazyTalk**, create a 3D actor whose head is prepared for exporting.



3. Click the **Send Head to Character Creator** button on the toolbar.



4. You will encounter the dialog box in **iClone Character Creator**. Adjust the settings in the box and click the **OK** button.



Note



- **Import Head Morph** - If you want to keep the shape of the head, then activate this box; only the texture of the 3D head will be passed to **iClone Character Creator**.



The 3D actor in **CrazyTalk**



Export to **iClone Character Creator**
Import Head Morph: Off



Export to **iClone Character Creator**
Import Head Morph: On

- **Import Texture** - Choose the **Head and Body** radio button to pass the texture of the head and both to the character in **iClone Character Creator**. Choose the **Head Only** radio button to pass only the texture of the head.
- **Dynamic Appearance Texture Settings** - Choose the **Reset** radio button to clear the current **Dynamic Appearance Texture Settings** of the target character in **iClone Character Creator**. Choose the **Keep Current** radio button if you want to keep the settings you have made to this character and have it blend with the texture from **CrazyTalk** actor. * Please note that the example below does not load the morphing data from **CrazyTalk**.



Actor in **CrazyTalk**



Character in **iClone Character Creator**



Reset radio button is chosen to clean the current **Dyna-Keep Current** radio button is chosen to blend the texture from the **CrazyTalk** actor and the original character.

5. The 3D actor's head will be applied to the character in **iClone Character Creator**.

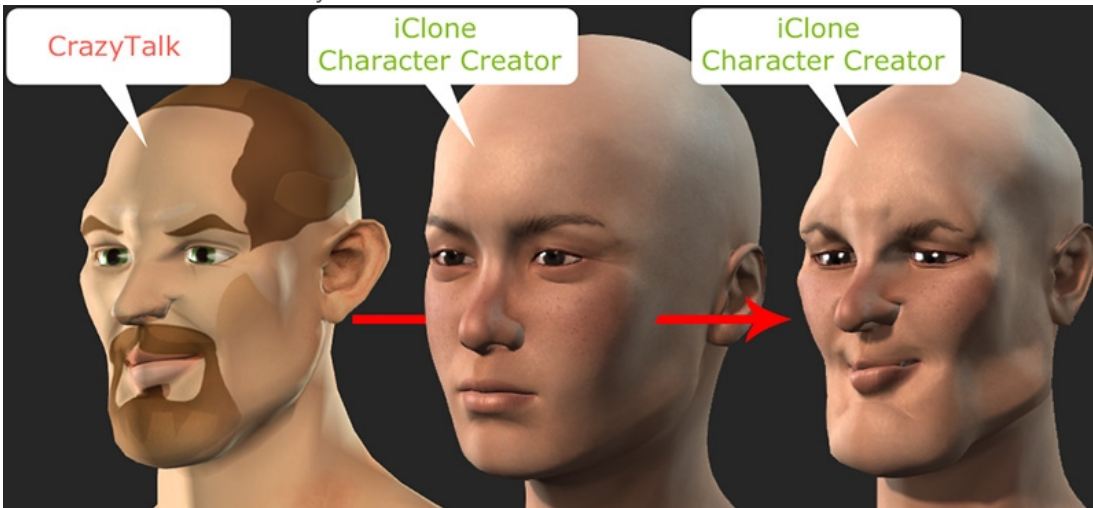


6. You can explicitly edit the morphing or textures of the head in **iClone Character Creator** based on the 3D head from **CrazyTalk**.



Removing Morphing Effect for iClone Character Creator

When you pass a head from **CrazyTalk** to **iClone Character Creator**, the morphing effect already applied on the character in **iClone Character Creator** will be kept and blended with the head shape from **CrazyTalk**, which can result in a totally different or even unsatisfactory results in **iClone character Creator**.



Please follow the steps below to ensure the integrity of the shape of the **CrazyTalk Head** can be preserved in **iClone character Creator**.

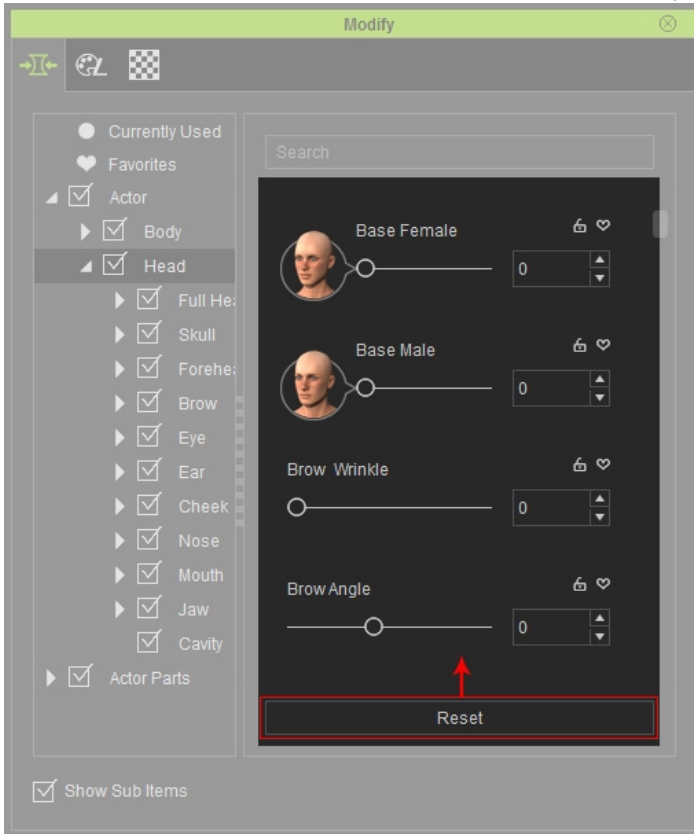
1. Make sure the character with the **CrazyTalk Head** (the rightmost one in the illustration shown above) in **iClone Character Creator** is selected.



2. Open the **Modify** panel, select the **Head** node in the **Morphs** tab and make sure the **Show Sub Item** box is activated.



- Click the **Reset** button to initialize the values for all the morph settings.



- The morphing effect will be removed afterward. The **CrazyTalk Head** thus shows identical one as created in **CrazyTalk**.



- If you pass the texture from **CrazyTalk**, the character's head will be completely identical.



Replacing iClone Character's Head with CrazyTalk 3D Head

If you do not want to edit characters in **iClone Character Creator** and want to directly export the head to **iClone** for creating animations, then you can save the head as a **Reallusion Head (*.RLHead)** and replace the head of the **CC character** in **iClone** with it.

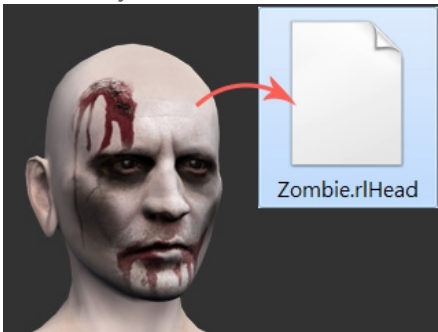
1. Create a new actor in **CrazyTalk**.



2. Click the **Export RLHead** button on the toolbar.



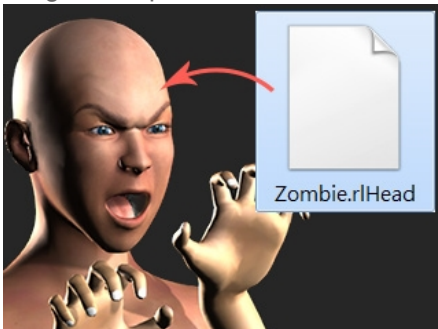
3. Save it to your destination folder as a head file (*.RLHead).



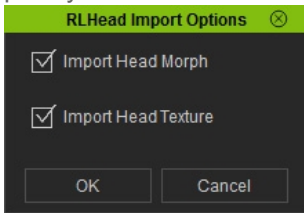
4. In **iClone**, make sure a **CC character** is applied (pose or motion is optional).



5. Drag and drop the saved head file onto the character.



6. You will be asked whether to load the morphing and texture data in the head file. Click the **OK** button to load them completely.



Note

Activate these two boxes in accordance to your needs. Activate the **Import Head Morph** to load the shape of the head while the **Import Head Texture** to load the head textures in the head file exported from **CrazyTalk**.



Import Head Morph: On
Import Head Texture: Off



Import Head Morph: Off
Import Head Texture: On

7. The original head is replaced with the one you created from **CrazyTalk**.

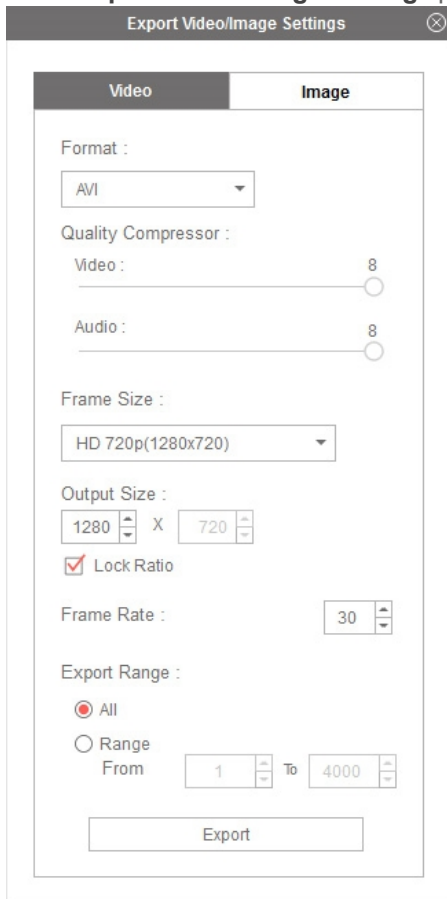


Exporting a Video

CrazyTalk offers the convenient feature of exporting your projects 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** or **iPhone** quality.

Exporting Video - Windows OS

1. Click the **Export Video/Image**  button.
2. In the **Export Video/Image Settings** panel, switch to the **Video** tab.



The screenshot shows the 'Export Video/Image Settings' dialog box with the 'Video' tab selected. The 'Format' dropdown is set to 'AVI'. The 'Quality Compressor' section has sliders for 'Video' and 'Audio' both set to 8. The 'Frame Size' dropdown is set to 'HD 720p(1280x720)'. The 'Output Size' section shows '1280' x '720' with 'Lock Ratio' checked. The 'Frame Rate' is set to '30'. The 'Export Range' section has 'All' selected. The 'Export' button is at the bottom.

3. Choose from the **Format** drop-down list.



The screenshot shows the 'Format' drop-down list with the following options: AVI, WMV, MP4, and WAV.

4. Determine the frame size from the **Frame Size** drop-down list.

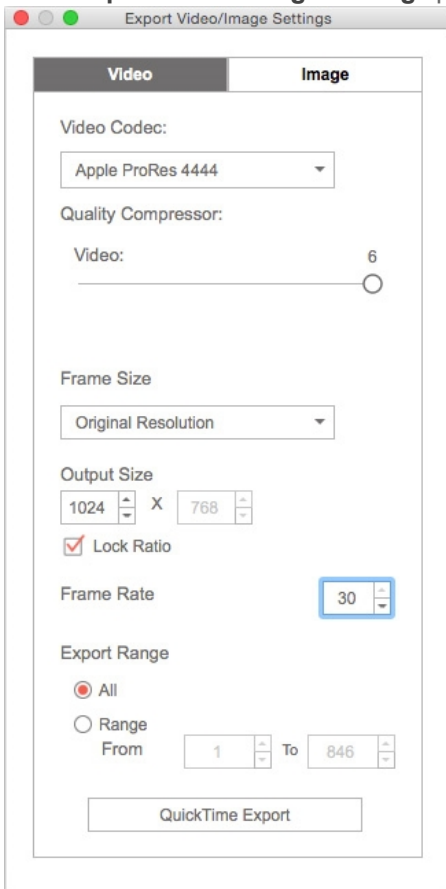


The screenshot shows the 'Frame Size' drop-down list with the following options: HD 720p(1280x720), DVD NTSC(720x480), DVD PAL(720x576), HD 720p(1280x720), HD 1080p(1920x1080), Ultra HD(3840x2160), iPad(1024x768), iPhone(960x640), Netbook(1024x600), Widescreen(1440x900), Widescreen(1680x1050), Full Frame(800x600), Full Frame(1440x1080), and Others.

5. You may also manually adjust the **Output Size** by entering the target width and height. Activate the **Lock Ratio** to keep a fixed ratio for the exported video.
6. Click the **Export** button to export the project into a video.

Exporting QuickTime Video - Mac OS

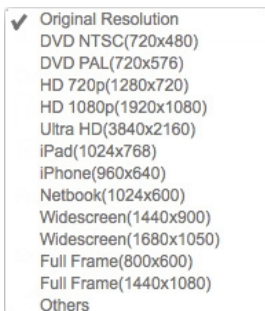
1. Click the **Export Video/Image**  button.
2. In the **Export Video/Image Settings** panel, switch to the **Video** tab.



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 the target width and height. Activate the **Lock Ratio** to keep a fixed ratio for the exported video.
6. Click the **QuickTime Export** button to export the project into an **MOV** video.

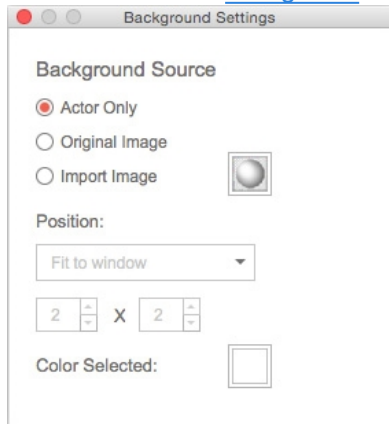
Exporting Video for Further Compositing

If you wish to export videos for compositing with other images or videos via external video editing tools, then there are three methods according to your operating system:

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 external video editing tools, then follow the steps below:

1. Make sure that the [background](#) is set to **Actor Only** with a solid color.



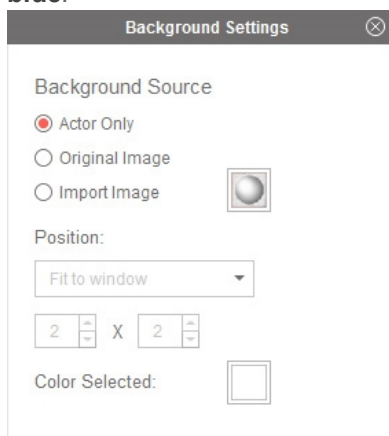
2. Click the **Export** button to show the panel.
3. Simply select the **Apple ProRes 4444** codec from the **Video Codec** drop-down list and export the project.



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 needing the background of the exported video to be filtered out when you composite the video in a video editing tool, then please follow the steps below:

1. Make sure that the [background](#) is set to **Actor Only** with a solid color. The commonly used color is either **green** or **blue**.




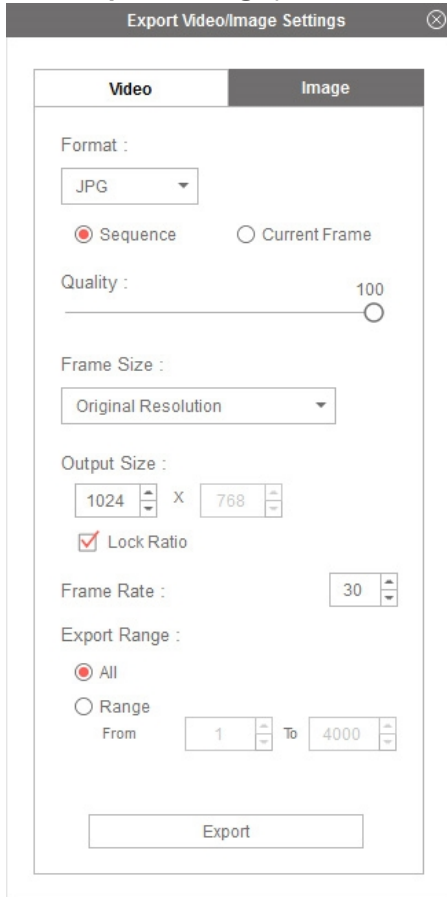
2. Click the **Export** button to show the panel.
3. Export the project as an ordinary video that does not contain any **Alpha Channel**.
4. Load the exported video into an external video editing tool.
5. Use the feature for filtering the background (e.g. **chroma key** in Adobe Premiere). The exported video can then be overlaid on top of other video or images without the original solid color background.

Exporting an Image

You may convert your projects into sequenced image (BMP/JPG/TGA/PNG) files to broadcast on a web server.

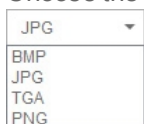
Exporting Image

1. Click the **Export**  button.
2. In the **Export Settings** panel, switch to the **Image** tab.



The dialog box is titled "Export Video/Image Settings" and has a close button in the top right corner. It features two tabs: "Video" and "Image". The "Image" tab is selected. Inside the "Image" tab, there are several settings: "Format" is set to "JPG" in a dropdown menu; "Sequence" is selected with a radio button, and "Current Frame" is unselected; "Quality" is set to 100 on a slider; "Frame Size" is set to "Original Resolution" in a dropdown menu; "Output Size" is set to 1024 x 768 in two input boxes; "Lock Ratio" is checked with a checkbox; "Frame Rate" is set to 30 in a spinner box; "Export Range" has "All" selected with a radio button, and "Range" is unselected; under "Range", "From" is 1 and "To" is 4000 in spinner boxes; and an "Export" button is at the bottom.

3. Choose the desired format from the **Format** drop-down list.



A dropdown menu showing the selected format "JPG" and a list of other available formats: BMP, JPG, TGA, and PNG.

4. Determine if you want to export the entire project or just one image:

☒ Sequence ☐ Current Frame

Exporting Entire Project into Sequence Images:

- i. Choose the **Sequence** radio button.
- ii. 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 a Single Image:

- i. Choose the **Current Frame** radio button.



- ii. Choose the **Current Frame** radio button.

5. Determine the frame size from the **Frame Size** drop-down list.



6. You may also manually adjust the **Output Size** by entering a target width and height. Activate the **Lock Ratio** to keep a fixed ratio for the exported video.
7. Click the **Export** button to export the project into sequenced images or as one image.

CHAPTER 10

Keyboard Shortcuts

Global Shortcuts

Global Shortcuts for Windows OS

On-screen Display

Function	Shortcut
Show / Hide Timeline	F3
Show / Hide Content Manager	F4
Show / Hide Project Toolbar	F5
Show / Hide Functional Toolbar	F6
Show / Hide FPS	Ctrl + F
Online Manual	F1

Working Area

Function	Shortcut
Undo	Ctrl + Z
Redo	Ctrl + Y
Play / Pause	Spacebar
Render Result (Current Frame)	F10
Stop and go to Start Frame	,
Show / Hide Auto Motion Settings Panel	A
Show / Hide Face Puppet Panel	P
Show / Hide Face Key Editor Panel	K
Show / Hide Lips Editor Panel	L
Full Screen Mode	F11
Apply Image as Background	Ctrl + Dragging Image to Stage
Apply Audio as Background Music	Ctrl + Dragging Audio File to Stage
Replace Image (2D Actor only)	Ctrl + R
Quit	Ctrl + Q

Actor Transform

Function	Shortcut
Move Actor	M
Rotate Actor	R
Scale Actor	S
Reset Actor's Transformation	Home

File

Function	Shortcut
Open Project	Ctrl + O
New Project	Ctrl + N
Save Project	Ctrl + S
Save As Project	Ctrl + Shift + S

Global Shortcuts for Mac OS



Narrow Keyboard (78 keys) - Mac OS:

On-screen Display

Function	Shortcut
Show / Hide Timeline	F3 (or fn + F3)
Show / Hide Content Manager	F4 (or fn + F4)
Show / Hide Project Toolbar	F5 (or fn + F5)
Show / Hide Functional Toolbar	F6 (or fn + F6)
Show / Hide FPS	Command ⌘ + F
Online Manual	F1 (or fn + F1)

Working Area

Function	Shortcut
Undo	Command ⌘ + Z
Redo	Shift ⇧ + Command ⌘ + Z
Play / Pause	Spacebar
Render Result (Current Frame)	F10 (or fn + F10)
Stop and go to Start Frame	,
Show / Hide Auto Motion Settings Panel	A
Show / Hide Face Puppet Panel	P
Show / Hide Lips Editor Panel	L
Full Screen Mode	Command ⌘ + F11
Apply Image as Background	Command ⌘ + Dragging Image to Stage
Apply Audio as Background Music	Command ⌘ + Dragging Audio File to Stage
Replace Image (2D Actor only)	Command ⌘ + R
Quit	Command ⌘ + Q

Actor Transform

Function	Shortcut
Move Actor	M
Rotate Actor	R
Scale Actor	S
Reset Actor's Transformation	fn + Left Arrow Key

File

Function	Shortcut
Open Project	Command ⌘ + O
New Project	Command ⌘ + N
Save Project	Command ⌘ + S
Save As Project	Shift ⇧ + Command ⌘ + S



Wide Keyboard (113 keys) - Mac OS

Function

Show / Hide Timeline
Show / Hide Content Manager
Show / Hide Project Toolbar
Show / Hide Functional Toolbar
Show / Hide FPS
Online Manual

Function

Undo
Redo
Play / Pause
Render Result (Current Frame)
Stop and go to Start Frame
Show / Hide Auto Motion Settings Panel
Show / Hide Face Puppet Panel
Show / Hide Lips Editor Panel
Full Screen Mode
Apply Image as Background
Apply Audio as Background Music
Replace Image (2D Actor only)
Quit

Function

Move Actor
Rotate Actor
Scale Actor
Reset Actor's Transformation

Function

Open Project
New Project
Save Project
Save As Project

On-screen Display

Shortcut

F3 (or fn + F3)
F4 (or fn + F4)
F5 (or fn + F5)
F6 (or fn + F6)
Command ⌘ + F
F1 (or fn + F1)

Working Area

Shortcut

Command ⌘ + Z
Shift ⇧ + Command ⌘ + Z
Spacebar
F10 (or fn + F10)
,
A
P
L
Command ⌘ + F11
Command ⌘ + Dragging Image to Stage
Command ⌘ + Dragging Audio File to Stage
Command ⌘ + R
Command ⌘ + Q

Actor Transform

Shortcut

M
R
S
Home (or fn + Left Arrow Key)

File

Shortcut

Command ⌘ + O
Command ⌘ + N
Command ⌘ + S
Shift ⇧ + Command ⌘ + S

Timeline Shortcuts

Windows OS

Function	Timeline	Shortcut
Show / Hide Playbar		F9
Copy Keys or Clips		Ctrl + C
Cut Keys or Clips		Ctrl + X
Paste Keys or Clips		Ctrl + V
Delete Keys or Clips		Delete
Play Pause		Spacebar
Loop		Alt + L
Speed		Alt + S
Break a Clip		Alt + B
Stop and go to Start Frame		,
Go to End Frame		End
Go to Previous Frame		Left Arrow Key
Go to Next Frame		Right Arrow Key
Jump to Next Key or Clip		Tab
Jump to Previous Key or Clip		Shift + Tab
Zoom in the Timeline		+ (or Shift ↑ + "=")
Zoom out the Timeline		-

MAC OS

Function	Timeline	Shortcut
Show / Hide Playbar		F9 (or fn + F9)
Copy Keys or Clips		Command ⌘ + C
Cut Keys or Clips		Command ⌘ + X
Paste Keys or Clips		Command ⌘ + V
Delete Keys or Clips		fn + Delete
Play Pause		Spacebar
Loop		Option + L
Speed		Option + S
Break a Clip		Option + B
Stop and go to Start Frame		,
Go to End Frame		fn + Right Arrow Key
Go to Previous Frame		Left Arrow Key
Go to Next Frame		Right Arrow Key
Jump to Next Key or Clip		Tab
Jump to Previous Key or Clip		Shift + Tab
Zoom in the Timeline		+ (or Shift ↑ + "=")
Zoom out the Timeline		-

Shortcuts in Editors

Windows OS

Function

Undo	Mask Editor
Redo	Shortcut
Switch Brush / Eraser	Ctrl + Z
Brush Size	Ctrl + Y
	B
	[- Decrease Size
] - Increase Size
Temporary Hand Tool	Spacebar + Drag
Color Range	Shift + Click (Increase Selection)
	Alt + Click (Decrease Selection)
Zoom	Mouse Wheel
Zoom In	+
Zoom Out	-
Zoom Fit	*
Zoom Real Size	/

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 (During Previewing and Recording)	1~7
Switch Full Face Controls (During Previewing and Recording)	Q, W, E, R, T, Y
Start / Stop Previewing	Space bar
Start Recording	Ctrl + Shift + Space bar
Stop Recording	Space bar
Detail Control List	Ctrl + Shift + F2

Creating 3D Head - Front / Side Image Editing Pages

Function	Shortcut
Undo	Ctrl + Z
Redo	Ctrl + Y
Zoom	Mouse Wheel
Zoom In	+
Zoom Out	-
Zoom Fit	*
Zoom Real Size	/
Pan Original Photo	Spacebar + Drag

Creating 3D Head - Selecting 3D Face Profile Page

Function	Shortcut
Zoom	Mouse Wheel or Z + Drag
Pan	X
Rotate	C

Head Fitting Panel - Global

Function	Shortcut
Create a New Head	Ctrl + N

Save as Reallusion 3D Head File (*.r- IHead)	Ctrl + H
Front Fitting	1
Side Fitting	2
Texture Blending	3
Detailed Morph	4
Undo	Ctrl + Z
Redo	Ctrl + Y

Head Fitting Panel - 3D View Port

Function	Shortcut
Zoom	Z
Pan	X
Rotate	C
Home	Home
Front View	F
Side View	S

Head Fitting - Original Image View Port

Function	Shortcut
Home	H
Zoom	Mouse Wheel
Zoom In	+
Zoom Out	-
Pan Original Photo	Spacebar + Drag
Front / Side Dumping Texture	Shift + T

Mac OS

Function

Undo
Redo
Switch Brush / Eraser
Brush Size

Temporary Hand Tool
Color Range

Zoom
Zoom In
Zoom Out
Zoom Fit
Zoom Real Size

Mask Editor

Shortcut

Command ⌘ + Z
Shift ⇧ + Command ⌘ + Z
B
[- Decrease Size
] - Increase Size
Spacebar + Drag
Shift ⇧ + LMB (Increase Selection)
Option + LMB (Decrease Selection)
Mouse Wheel
+
-
*
/

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 (During Previewing and Recording)	1~7
Switch Full Face Controls (During Previewing and Recording)	Q, W, E, R, T, Y
Start / Stop Previewing	Space bar

Start Recording	Option + Space bar
Detail Control List	Ctrl + Command ⌘ + F2

Creating 3D Head - Front / Side Image Editing Pages

Function	Shortcut
Undo	Command ⌘ + Z
Redo	Shift ↑ + Command ⌘ + Z
Zoom	Mouse Wheel
Zoom In	+
Zoom Out	-
Zoom Fit	*
Zoom Real Size	/
Pan Original Photo	Spacebar + Drag

Creating 3D Head - Selecting 3D Face Profile Page

Function	Shortcut
Zoom	Mouse Wheel or Z + Drag
Pan	X
Rotate	C

Head Fitting Panel - Global

Function	Shortcut
Create a New Head	Command ⌘ + N
Save as Reallusion 3D Head File (*.rlHead)	Shift ↑ + Command ⌘ + H
Front Fitting	1
Side Fitting	2
Texture Blending	3
Detailed Morph	4
Undo	Command ⌘ + Z
Redo	Shift ↑ + Command ⌘ + Z

Head Fitting Panel - 3D View Port

Function	Shortcut
Zoom	Z
Pan	X
Rotate	C
Home	fn + Left Arrow Key
Front View	F
Side View	S

Head Fitting - Original Image View Port

Function	Shortcut
Home	H
Zoom	Mouse Wheel
Zoom In	+
Zoom Out	-
Pan Original Photo	Spacebar + Drag
Front / Side Dumping Texture	Shift ↑ + T