CrazyTalk6

Online Help (PRO)

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About CrazyTalk6

CrazyTalk6 features multiple actor animation capabilities for generating real-time dialogue sequences, along with **VividEye** technology to highly increase the high realism of virtual eye movement, and auto human face fitting advancement in **Reallusion**'s remarkably simple image transformation process that converts any 2D image into a fully animated digital actor within minutes. **CrazyTalk6** also empowers your desktop with the 3D digital media experience. It supports **Side-by-Side** and **Anaglyph** outputs which allow you to view 3D videos with **Red-Cyan**, **Shutter** or **Polarization** glasses and any general or specific display device.

By viewing the **CrazyTalk6** Help, you will be able to learn:

- How to transform your image into an actor.
- How to animate actor speech movements, emotions & SFX.
- How to control actor's stage and timeline editor.
- How to export for various applications.
- How to export 3D stereo media.

System Requirements

Hardware

- Pentium IV 2GHz (2.4GHz or higher recommended).
- 512MB RAM (1GB or higher recommended).
- 1GB disk space (2GB or higher recommended).
- Duplex Sound Card/VGA Card/Keyboard/Mouse/Microphone/Speaker.

Operating System

Windows XP SP2/Vista, Windows 7.

Browser

- Internet Explorer 6 or above.
- Firefox 2 or above.

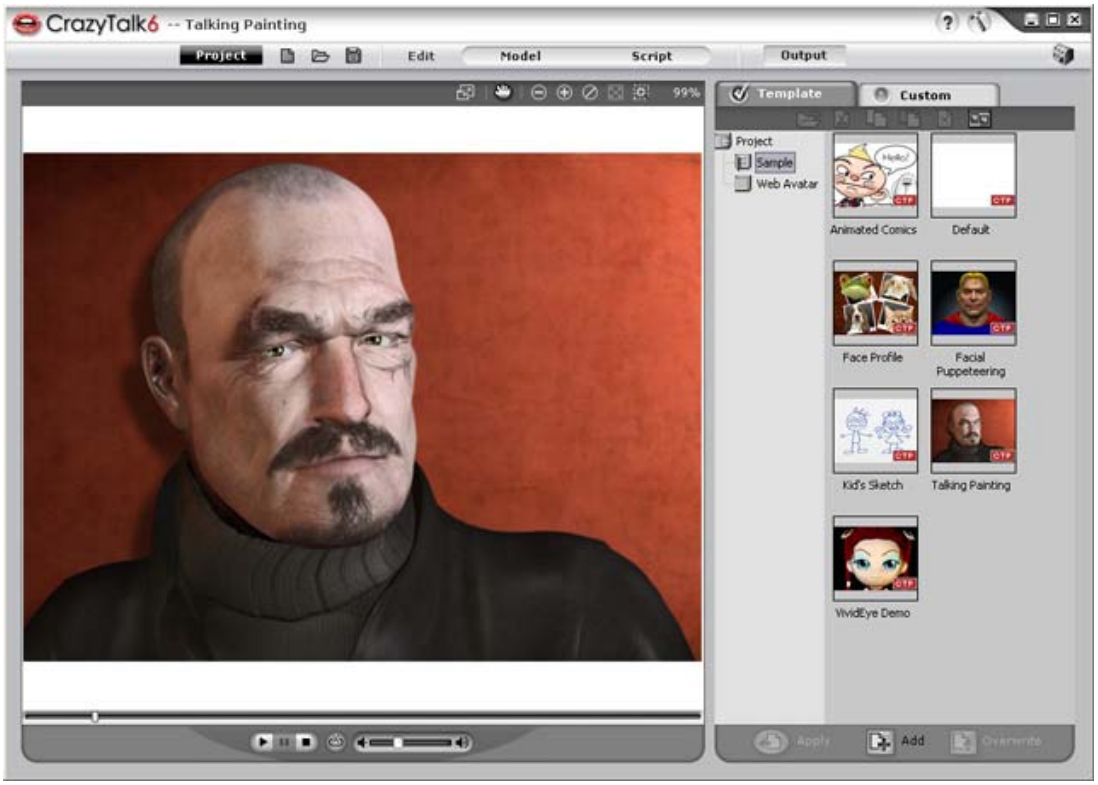
Miscellaneous

DirectX 9 & WMEncoder 9 are required for WMV exporting.

Getting Started

CrazyTalk allows you to import any digital photo, image or likeness of a face from your personal collection. Then, by using a combination of innovative technologies like real time image morphing, Natural Voice and/or TTS (Text-to-Speech), your favorite photos are brought to life! You can send them to your friends and colleagues using various output options. You can export your talking characters to HTML format for use on websites or export them to numerous media formats.

Note:
o You can download additional text-to-speech voices from Microsoft or browse the Reallusion website for more information.

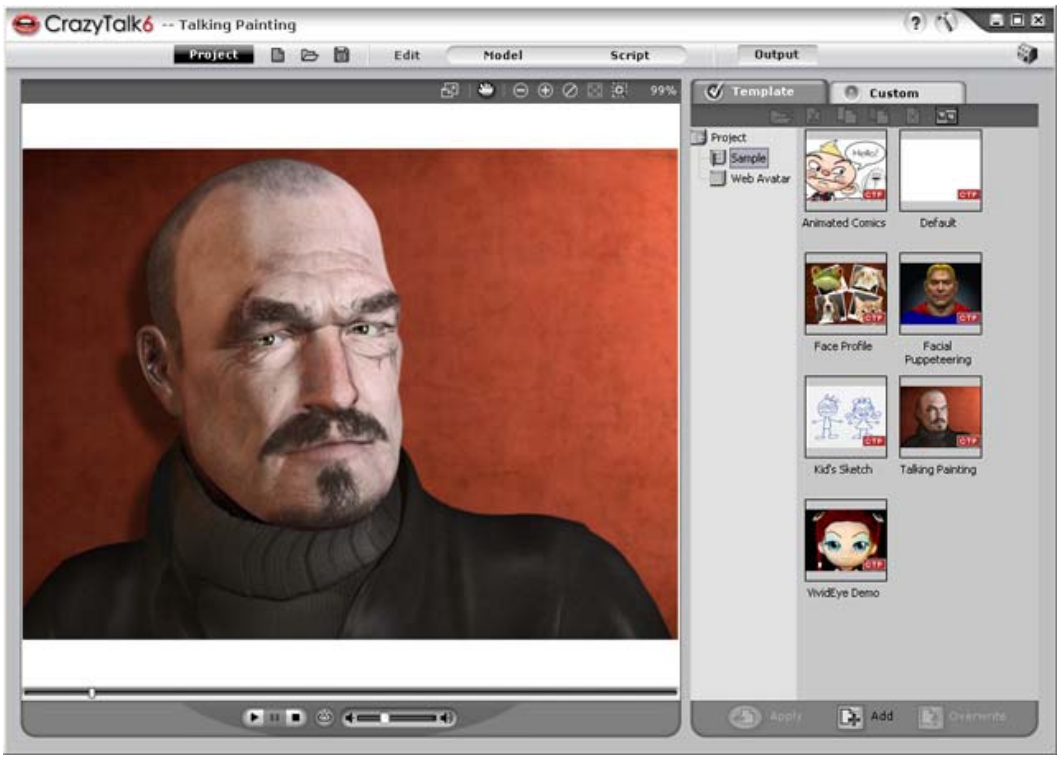


Click the following links to see how to quickly get started with CrazyTalk and create animated talking images.

1. Creating a CrazyTalk Project
2. Creating CrazyTalk Models
3. Creating a CrazyTalk Stage
4. Creating a CrazyTalk Script
5. Output

Creating a CrazyTalk Project

CrazyTalk allows you to compact all settings and related files into one project file instead of having to look for all your files scattered on your local machine.



Creating a blank project:

You may click the **New Project** button to start a new project with only one model on a white background with no script present throughout the project.

Creating a new project:

1. Create a model by loading an image.
2. Modify the script optionally.
3. Click the Save Project button. You are prompted to save the project.

Note:
o You may also use the **Add** button to save the project into the **Project Gallery.** o You may also save your current project while on the **Model** or **Script** page.

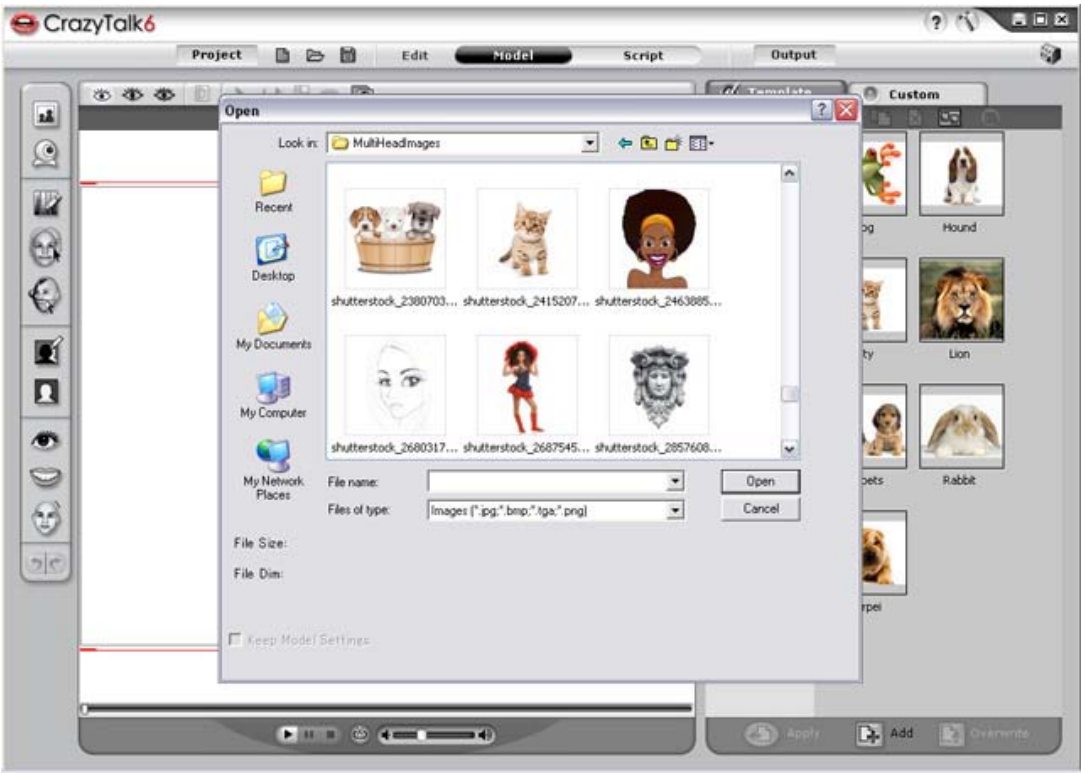
Opening a project:

- Click the **Open Project** button on the **Project** page.
- Double-click on the thumbnail in the **Template** or **Custom** gallery.

  Alternatively, select the desired project thumbnail and click the **Apply** button to open the project.
- Double-click on the project file (*.ctp) to open it.

Creating CrazyTalk Models

You can create your own customized **CrazyTalk Models** using any digital snapshot of yourself, a picture of your friends, colleagues, family members, i.e. any photo from your digital camera.



Creating Multiple CrazyTalk Models

Loading Image

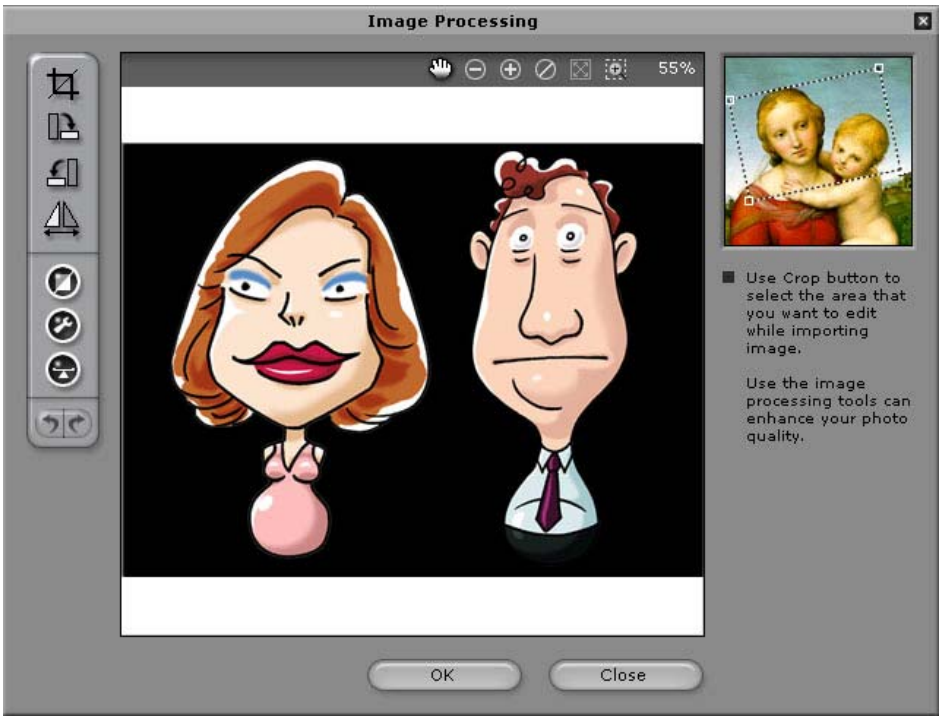
There are two ways to load your image:

- Import Image: Click to import a jpg, bmp, tga or png file with one or more faces to generate models.

- Camera Capture: Click to take a picture with your web camera. Another panel will open for capturing an image.

Cropping, Rotating and Enhancing Imported Image

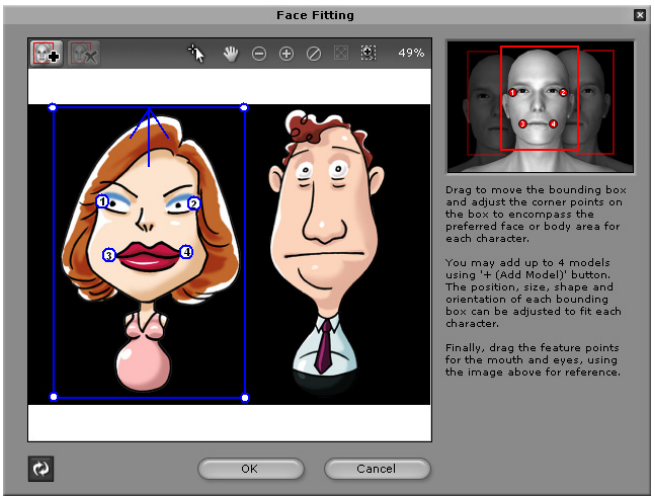
Image Processing is the first step of the wizard. You may also click the **Image Processing** button to open the image processing tools and enhance the image after exiting the wizard.



- **Crop Image:** Select the required image area.
- / **Rotate CW** / **Rotate CCW:** Rotate the image by 90 degrees in the clockwise or counter-clockwise direction.
- **Mirror:** Mirror the image on the horizontal axis.
- **Smart Level:** Adjust the color levels of the image automatically.
- **Color Level:** Adjust the brightness, contrast, hue and saturation levels of the image manually. 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.
- **Color Balance:** Adjust the color balance manually. Drag the sliders to adjust the **Cyan - Red**, **Magenta - Green**, and **Yellow -Blue** levels. Click Highlights to apply these color settings to emphasize the brighter areas. Click **Midtones** to apply these color settings to the entire image with average intensity. Click **Shadows** to apply these color settings to emphasize the darker areas in the image.

Face Fitting

The **Face Fitting** step is next. Click and move the indicators numbered 1, 2, 3, and 4 on the image to provide the four points for the fitting process as displayed in the sample image. You may also click the **Face Fitting** button to start the **Face Fitting** step again after exiting the wizard to add or delete models.



Adjust the four points as close to the correct position as possible to get the best fit for the eyes and mouth features.

If you merely want to have a single model in the project, please skip the following steps.

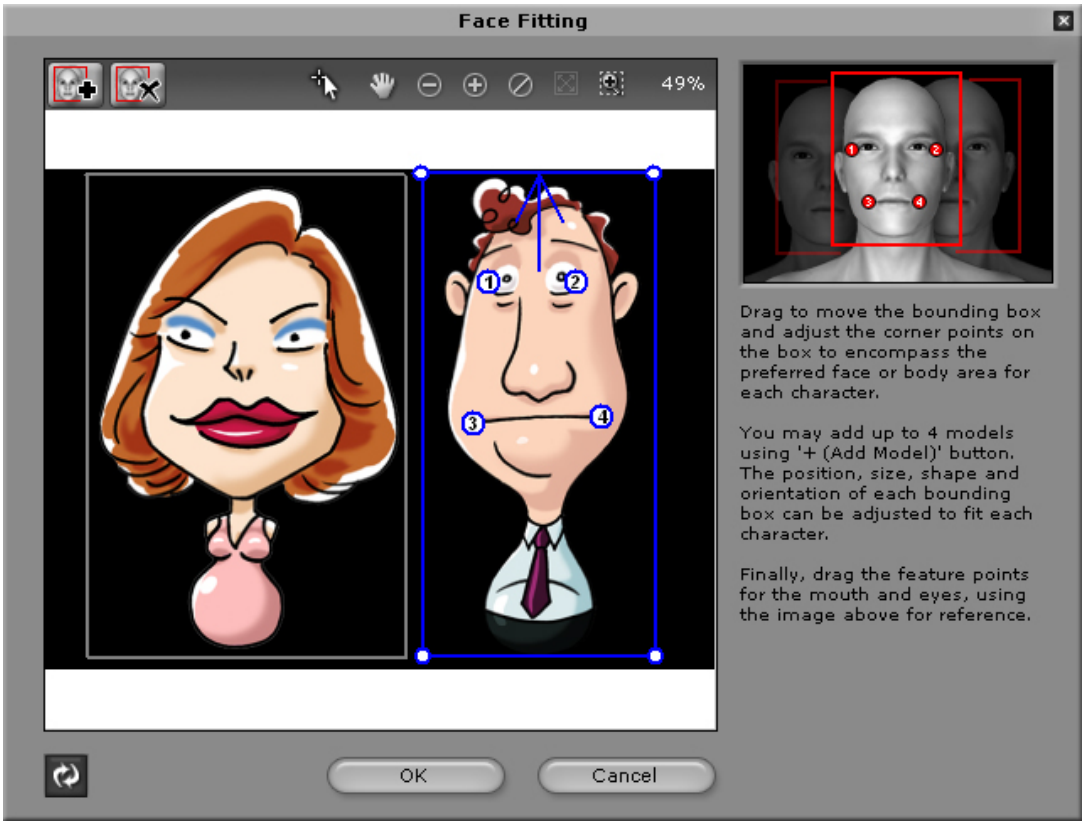
To generate multiple models (you may add up to four models):

i. Click the **Add Model** button.

ii. Drag on the image to select another character on the image. Please note that the top left corner of the cursor is the base for framing out a model.

iii. Locate the four feature points again to best fit the new model's eyes and mouth features.

iv. You may click on the target quadrilateral and click the **Delete Model** button to remove the model.



Click the **OK** button when you finish adding models and go to the next process.

(3D) Face Orientation

The **Face Orientation** step displays. Here you may assign different face styles to every model by clicking the model on the image and then selecting a suitable style.

You may also click the **Face Orientation** button to invoke the **Face Orientation** step again after exiting the wizard to re-assign different face styles to each model.

- Utilize the tool to rotate the oval wire to best fit the orientation of the face on the image. Do not worry if the wire does not perfectly fit the face on the image since this panel is only for deciding the rotation strength of the profile.
- **Strength:** Drag the slider to adjust the movement strength of the profile as the model rotates.
- **Preview:** Toggle this button and move your mouse around to see the effects of the **Strength** in the viewport. Toggle it again to leave the **Preview** mode.

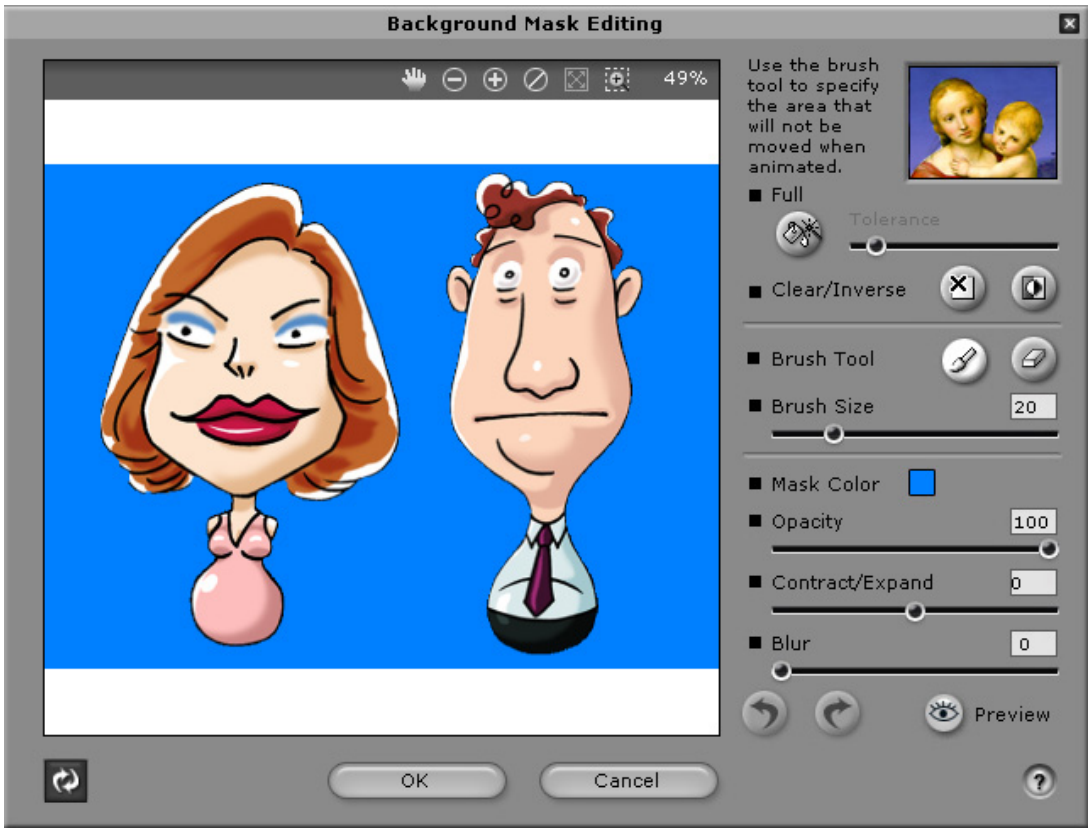
Click the **OK** button to exit the wizard and go back to the model page with the newly-generated models. You may click the , , and buttons on the **Model** page to re-launch the panels above to change the settings.

Detailed Model Editing

Separating Models from Background

Click the **Background Mask Editing** button to modify the area of the image that reveals the background image, which does not move along with the talking models.

If you load TGA or PNG images with alpha channel, the alpha channel will be automatically converted into the **Background Mask**.



Note:

- The background mask, also known as the alpha channel, controls the transparency of TGA or PNG images.
- The mask is defined by the blue area.
- The mask does not actually show up on the model. It is for your reference only.
- Please make sure the mask does not cover any model.

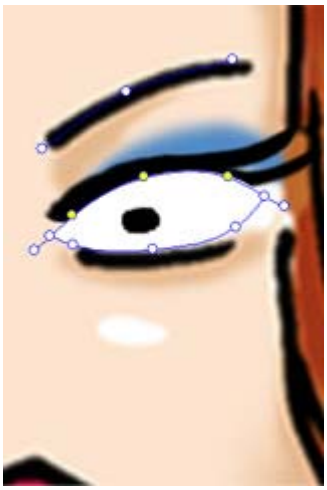
- **Full:** Extend the background mask over the complete image area.
- **Clear:** Delete the background mask.
- **Inverse:** Invert the background mask area. The area that was previously defined as the background mask and the animated area are swapped.
- **Paint:** Paint on the image to enlarge the background area or add more parts to it.
- **Erase:** Paint to erase parts of the background mask.
- **Brush Size:** Drag the slider to adjust the size of the brush tool.
- **Mask Color:** Click and specify the color for the background mask via the color palette.
- **Opacity:** Drag the slider to specify the opacity of the background mask.
- **Contract / Expand:** Drag the slider to contract or expand the background mask.
- **Blur:** Drag the slider to blur the edges of the background mask.
- **Preview:** View the results of your editing.

Fine Tuning Face Fitting in Wireframe Mode

CrazyTalk automatically generates a wire-frame surrounding the face according to the 4 points you set in the **Face Fitting** panel. You may click **Basic Facial Mode** or **Detailed Facial Mode** to view the wire-frame. Drag the

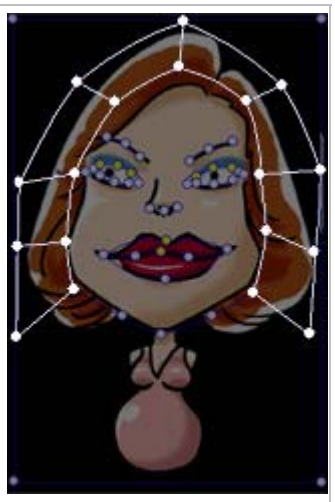
control points or the lines to fit the character's face much more precisely in these two modes.

Please also use the tools above the viewport to zoom in/out or pan the image to locate the points more precisely.

		
Basic Facial Mode	Detailed Facial Mode	Zoom in for Editing

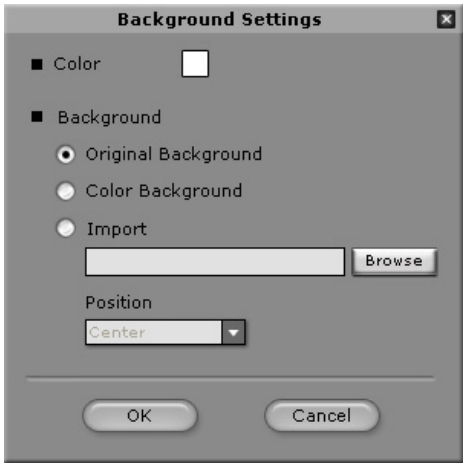
The wire-frame structure is divided into two parts, **Character Frame** and **Head Frame** (includes **Skull Mesh** and **Hair Mesh**).

Character Frame	
	• The character frame decides the range on the image to generate a model. • Cover the whole body of the character on the image with the character frame so the whole model can be transformed in the timeline editor.

Head Frame		
Skull Mesh		• The skull mesh is used to frame out the skull, eyes, nose and mouth of the model. • The more proper the points are aligned, the better the facial animation the model presents.
Hair Mesh		• The hair mesh, also known as **Pharaoh** mesh, is used to frame out objects attached to the head such as hair, hat or long ears (of animals). • It prevents the image from breaking and increases the realism as the model rotates.

Defining Custom Background

Click the **Background Settings** button to specify a solid color or an image as the background.



- **Color:** Click to specify a solid color as the background.
- **Background:**
  - **Original Background:** Use the background of the original image.
  - **Color Background:** Select this button to enable the solid color as background as specified in the previous step.
  - **Import:** Browse to your desired image and apply it as the background of your project. You may also specify the **Position** of the image in the background.

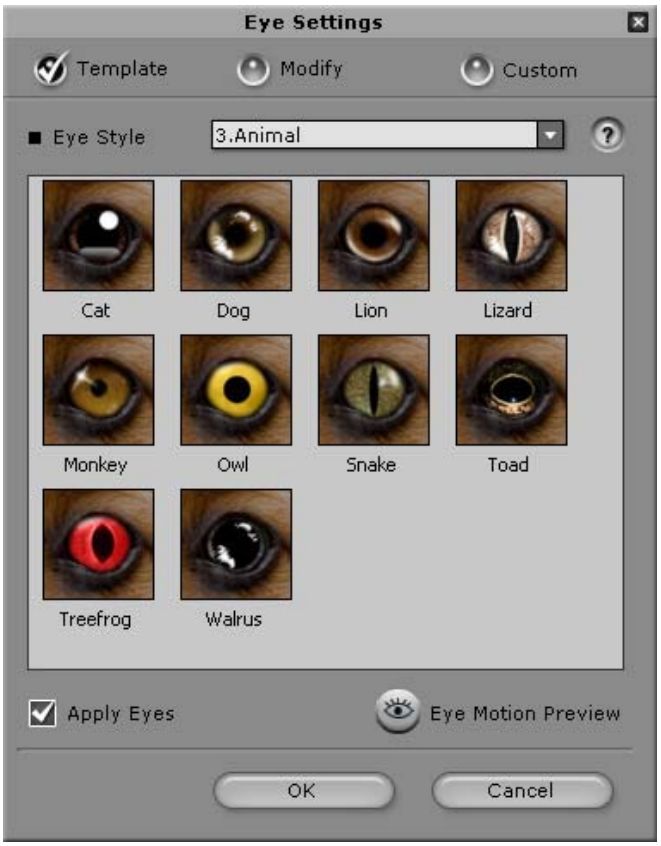
The original look	Define the background area (blue area)

Scene image imported as the background	Result

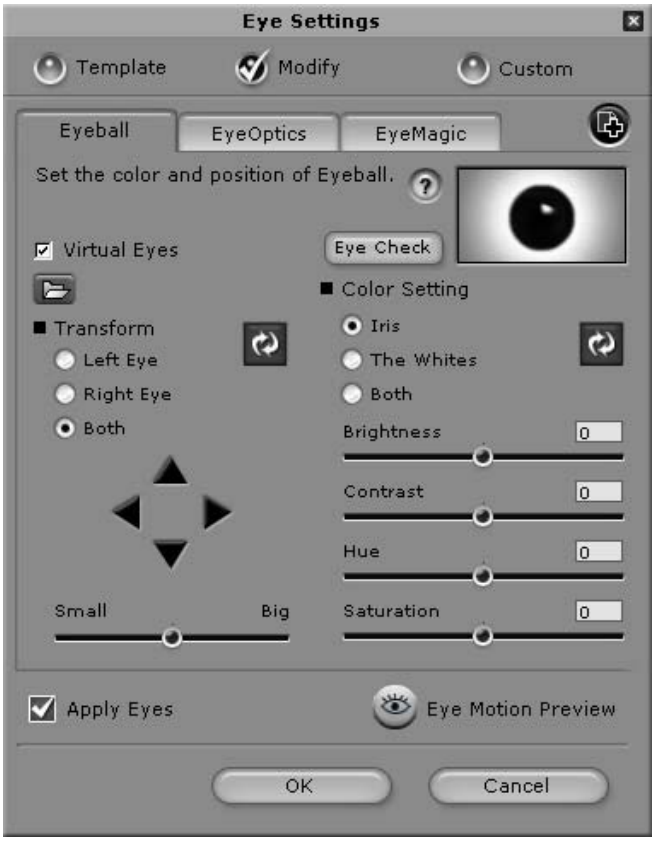
Specifying Virtual Eyes

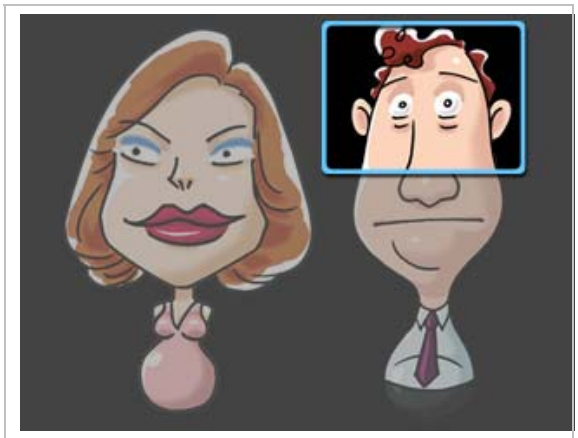
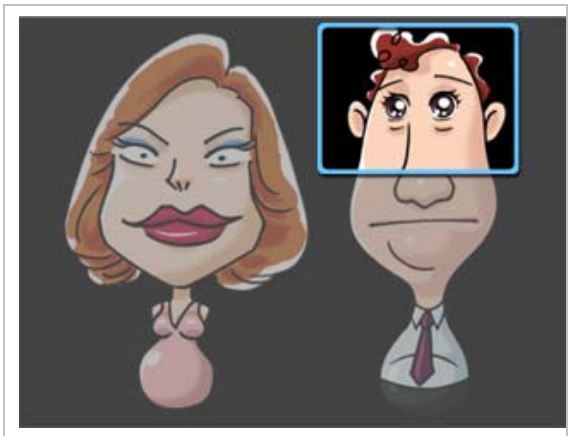
Click the Eye Settings button to specify the settings for the Eyes.

v. Select one of the eye templates from the **Eye Style** drop-down list.



i. Click **Modify**. You may then adjust the position and the color of the **Eyeball**, **Eyelash**, **Eye Shadow** as well as the **Specularity** of the eyes.

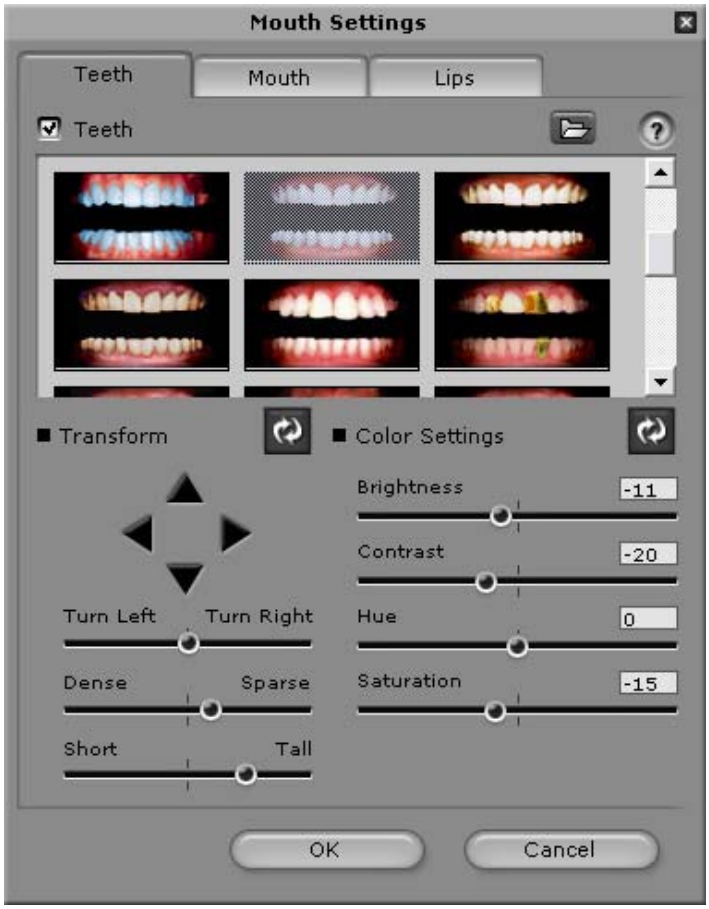


	
Before	After

You may also click the **Import** button to import custom images (JPG, BMP, TGA, PNG,) with or without alpha channel as the texture of the character's **Eyes** (256 pixels x 256 pixels).

Specifying Virtual Teeth and Inner Mouth Color

Click the **Mouth Settings** button to specify the settings for the **Teeth**, **Mouth** and **Lips**.

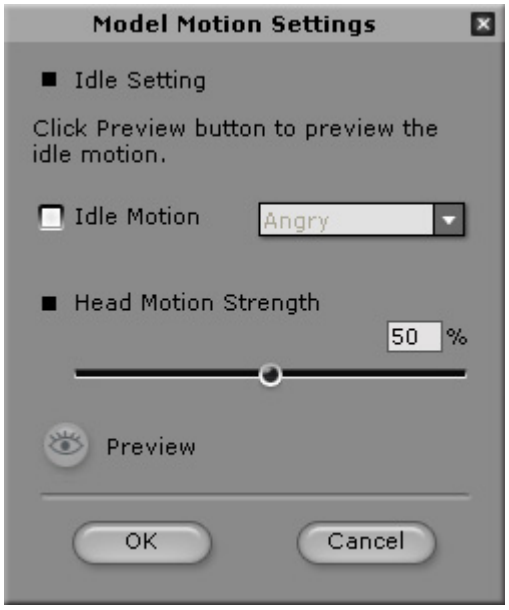


Before	After

You may also click the **Import** button to import custom images (JPG, BMP, TGA, PNG,) with or without alpha channel as the texture of the model's **Teeth** (256 pixel x 166 pixels).

Assigning Standby Motions

Pick the model and click the **Model Motion Settings** button to assign different **Standby Motions** to individual models. The models' head will rotate when they are not speaking.



Now you are ready to create a **CrazyTalk** stage. Please refer to Creating a Stage for more information.

Creating a Stage

In **CrazyTalk**, you may add up to four models in a project. These models can then speak simultaneously or at different times. The Stage panel enables you to insert audio scripts for all the models in advance. You can set the total length of the project, arrange the timing of all the scripts, set the camera movement and add background audio for the whole project before you fine-tune the individual scripts of each model.

Generate Empty Stage from Scratch

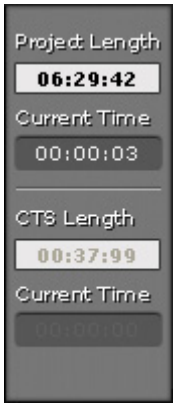
A. Click the New Script button to start a new empty stage.

B. Generate models.

C. Click Script at the top of the main program to toggle the Stage editor.

Setting Project Length

The time display panel shows the **Project Length**, **Current Time** and **CTS Length**. You may type in the **Project Length** field to specify the length of the project.



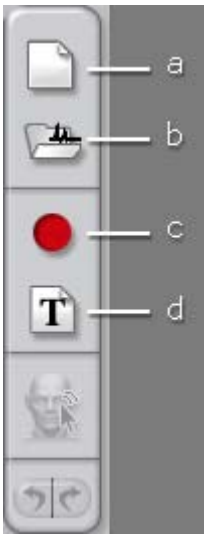
Adding Scripts

If you wish to add scripts to models, you may follow any of the methods below:

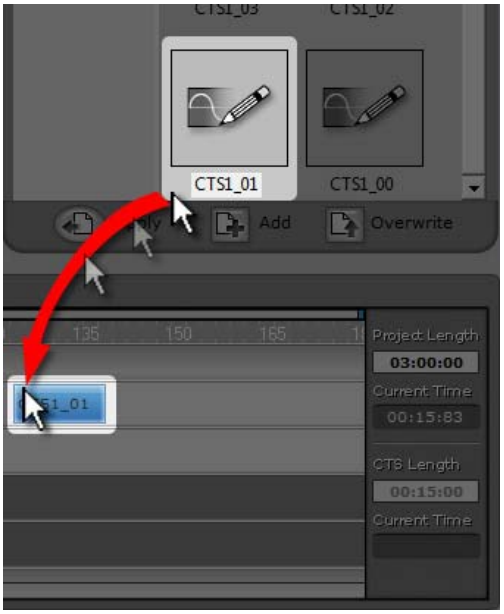
A. **Right Click** - Right click on the target model track and select the entries to insert a new talking script.

B. **Utilizing Tools**

1. Click inside the target model's track to set the start time of the script.
2. Use either tool to add a new script for the target model. For more information, please refer to Adding Model Audio:

	a. **New Script:** Click this button to add one blank script into the model's track. The default length of the new script is 15 seconds.
	b. **Import Audio:** Click this button to import a pre-recorded speech files in PCM WAV/MP3 format.
	c. **Record Audio:** Click this button to record voice via microphone installed on your system.
	d. **Text-to-Speech:** You may convert typed text into speech with this feature.

C. **Utilizing Templates** - Drag and drop a template from the **Script / Template** or **Custom** library to the target model's track at the desired time.

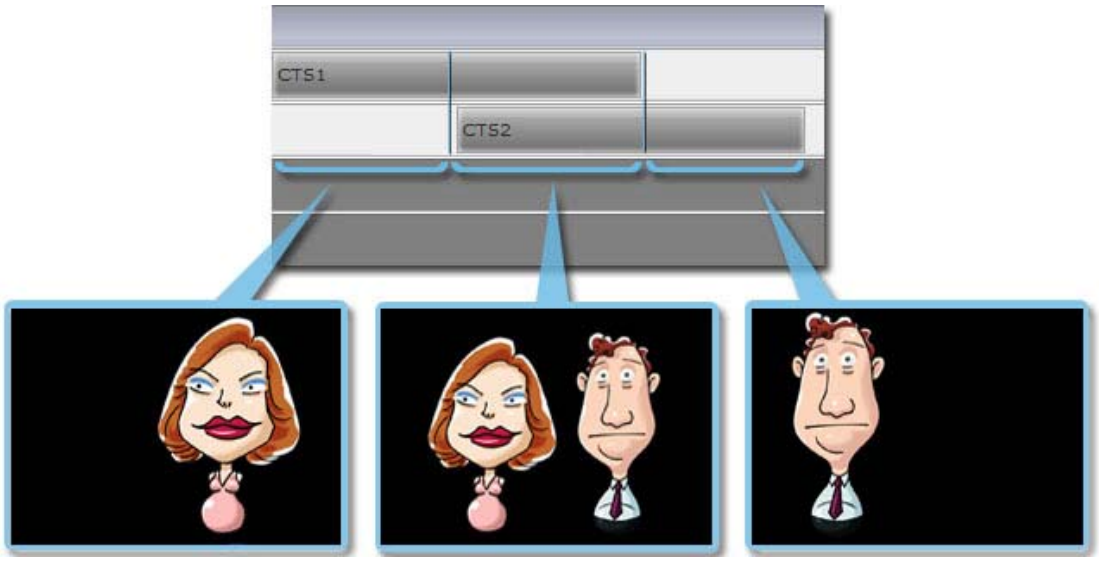


The illustration below displays the stage after talking scripts are added.

Note:
o Please refer to Creating a CrazyTalk Script for more information about modifying the talking scripts on the stage editor.

Setting Camera Movements

CrazyTalk's Camera feature allows you to zoom in on the models as they are speaking to generate dynamic camera movements. Press the **Camera Editor** Camera Editor button above the **Stage** to invoke the **Camera Editor** panel.



- : Toggle one or more buttons to define the moving method of the camera. Drag on the **Interactive Area** to move the camera to desired location and angle, click the **Set Key** button to add the result as a key into the **Camera** track in the Stage panel.
- Click the **Default Key** button to initialize the position and angle of the camera to the origin.
- Click **Resume** to abort any adjustment has made since the **Set Key** was last clicked.
- **Auto Zoom**: Check this box and the camera zoom in to shoot a close-up for the speaking models automatically. This feature prevents you from repetitively setting camera transform keys on the **Camera** track.

Importing Background Audio

Click the **Background Audio** button to load a prepared audio file as the background audio for the entire project.

You may then set the **Fade In**, **Fade Out** effects for the audio.

i. Click the Browse button to import a song or musical track in PCM WAV/MP3 format.
ii. Move the Volume slider to adjust the volume.
iii. Check the Fade In or Fade Out options to specify if you want the background audio to fade in or out respectively.
iv. Click the Preview button to listen to the background audio.

Adding Model Audio

The **Script** page is the critical phase in **CrazyTalk** process of creating a talking message. Here you decide what and how your model talks and specify the expressions, facial movements and special effects that go along with the animated script.

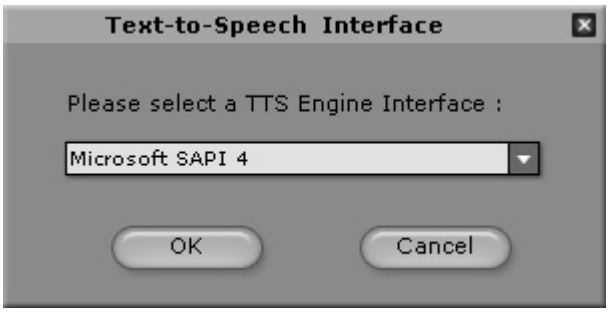
Note: You can download additional text-to-speech voices from Microsoft or browse Reallusion website for more information.

Adding Model Audio

- Click the **New Script** button to start a new script without any keys. The length of the new script is 15 seconds by default.
- To import WAV/MP3 files, click the **Import Audio** button to import a speech file in PCM WAV/MP3 format. Specify the name and location of the WAV/MP3 file using the dialog box and click **Open** to open the file.
- To record sound, click the **Record Audio** button.

Click the **Record** button to start recording. Recording from the specified audio source starts.

- To convert text to speech, click the **Text-to-Speech** button.
  i. If you have more than one TTS engine installed, you may need to select the engine first.



ii. Type the text in the editor window.

iii. From the **Voice Mode** drop-down list, select the type of voice to be used by the model for speaking.

iv. Adjust the voice by using the **Volume**, **Pitch**, and **Speed** sliders to achieve the desired effect. Click the **Preview** button to play back the result. Click the **OK** button when done.

Creating a CrazyTalk Script

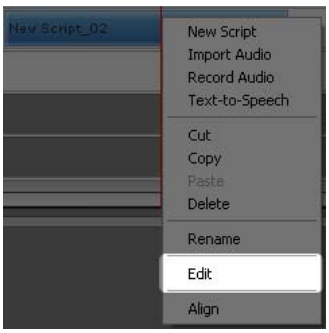
The **Script** page is the critical phase in **CrazyTalk**'s process of creating talking images. Here you decide what and how your models talk and specify expressions, facial movements and special effects that go along with the animated script.

Note: You can download additional text-to-speech voices from Microsoft or browse Reallusion website for more information.

Modifying a Talking Script

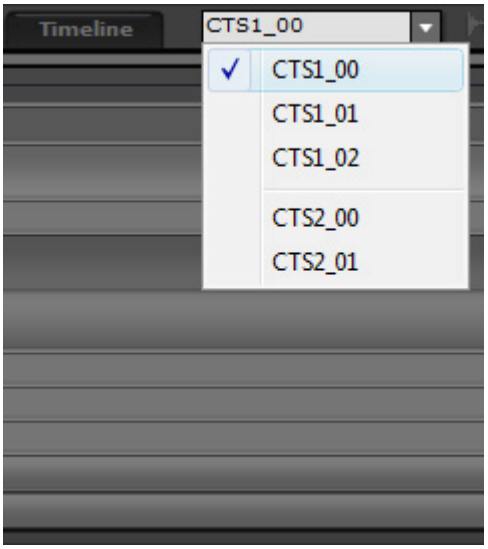
There are three methods to modify a talking script:

A. Double-click or right-click (select **Edit** in the right menu) on the target script in the Stage.



B. Select a script in the track and click the **Timeline** tab in the Stage panel.

C. In the **Timeline Editor**, select the target script in the script drop-down list.



Adding Expressions to a Talking Script

There are 4 methods to add expressions to a talking script:

A. Emotives Library

- Click the **Emotives** tab to view a set of basic templates such as sad, angry, happy, and more. Double-click on the desired template to apply it.
- You can adjust the strength of the expression on the model's face by using the

slider.

B. Motion Clip Gallery

- Drag-and-drop the desired template from the **Motion Clip** gallery.

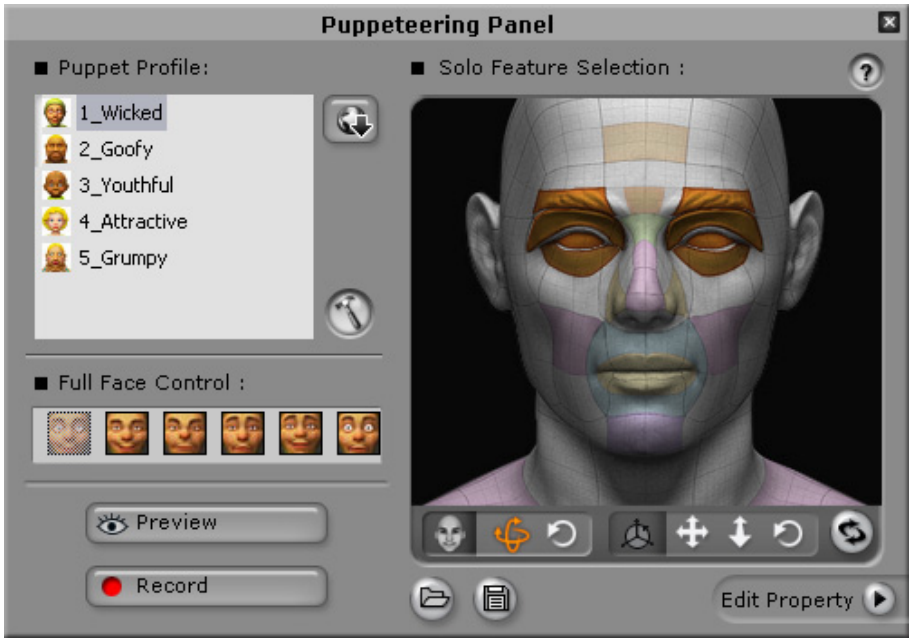
  (These templates contain expressions and special effects)

To create a custom motion clip, drag to select the desired portion in the **Motion Clip** track and click the **Group** button.

C. Utilizing Puppeteering Panel

Click the **Puppet Control** button to invoke the **Puppeteering Panel** to create custom motion clips. A motion clip will be overlapped as the top layer of the Face, Transform, Eyes or Shoulders tracks.

- Select a Puppet Profile and full face control, click the **Preview** button and press the **Space bar** to view the result. Click the **Record** button when you are satisfied with the settings.



- Pick a desired profile and click the **Record** button, then press the **Space bar** to start recording the motion clip. Move your mouse to move the model, the movements will be recorded simultaneously. Press the **Space bar** again to stop recording.

D. Setting Keys

There are two methods to set keys to individual tracks:

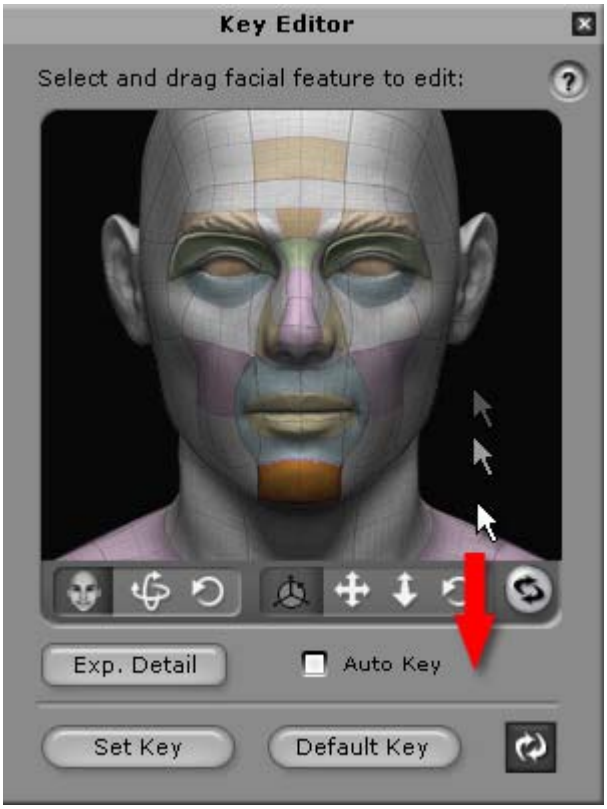
- Double click on any empty place of each track to invoke the related dialog box to add desired template.

Stage
Emotives
Timeline
CTSClip
Voice
Lips
Motion Clip
Transform
Face
Face Strength
Head
Eye
Shoulder
SFX
SFX-Swap
Project Length
03:00:00
Current Time
CTS Length
00:37:99
Current Time
00:00:00

Track	Double Click	Description
Voice	Select all tracks.	
Lips	Invoke **Lip Synching** dialog box.	• Select desired template. • Adjust the strength.
Motion Clip	No reaction	• Drag in this track to make a range for creating custom motion clips. • Group the data from **Transform**, **Face**, **Face Strength**, **Head**, **Eye**, **Shoulder**, **SFX** and **SFX-Swap** to convert into one single **Motion Clip**.
Transform	Invoke **Key Editor** dialog box.	• Set transform keys for **Models** manually or automatically.
Face/Face Strength	Invoke **Facial Expression** dialog box.	• Select desired template. • Adjust the strength of the expression. • Modify the **Facial Feature** and **Muscles**. • Add/Delete customized template.
Head	Invoke **Key Editor** dialog box.	• Set keys for **Head**, **Facial Muscles**, **Eyes**, and **Shoulders** manually or automatically. • Specify the **Facial Muscles** in an **Expression** key.
Eye		
Shoulder		
SFX/SFX-Swap	Invoke the	• Select **Image Theme**,

	Special Effect dialog box.	**Image Overlay**, and **Text SFX** as special effect. • Type texts as the contents of the text special effects. • Two tracks of SFX for creating more special effects in the front or background of the image.

- Invoke the **Key Editor** panel, pick **Head, Transform**, **Eyes** or **Shoulders** in the **Key Editor** panel, drag on the sample image to adjust the model, and click the **Set Key** button to add a key into the timeline. Check the **Auto Key** box to update the key automatically instead of having to press the **Set Key** button manually.



Note:

- If you wish to temporarily turn off the camera effects, you may toggle the Camera On/Off button. Turning off the camera effects with this button does not affect the result of exporting media files.
- Click the Add button to add the desired motion clip into the motion clip track.
- Alternatively, you may drag and drop the desired motion clip from the motion clip gallery onto the Motion Clip track.

Output

On the output page, you may export your project for **Video**, **Widget**, **Web**, or **YouTube**.

Select the desired media type from the four tabs.

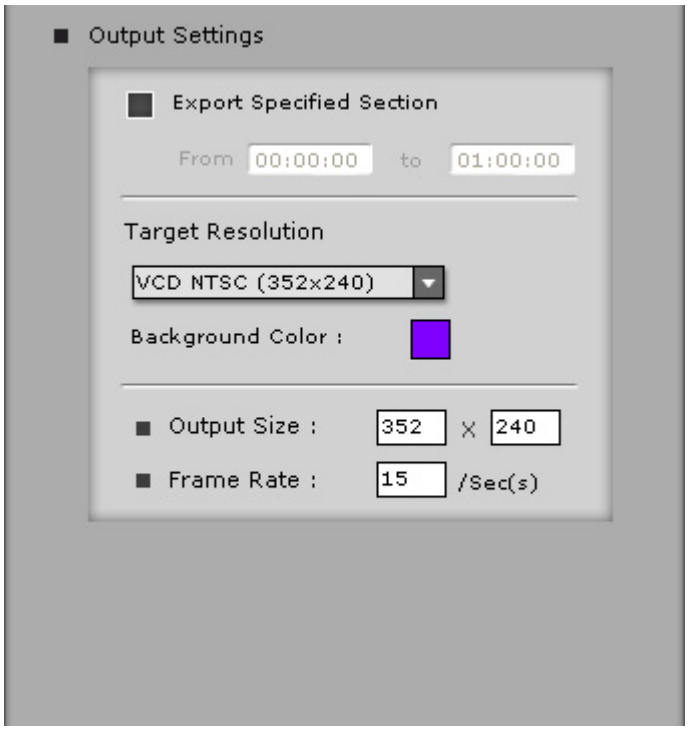
Output Format:

Tab	Available Format
Video	• AVI • MP4 • RM • Sequenced BMP, TGA and PNG • WMV • WAV
Widget	• iWidget
Web	• Flash • RM

	• WMV
YouTube	• FLV

Note:
o If you want to export into the WMV file format from **CrazyTalk**, you will need to first download and install WMVEncoder9 from the Microsoft website.

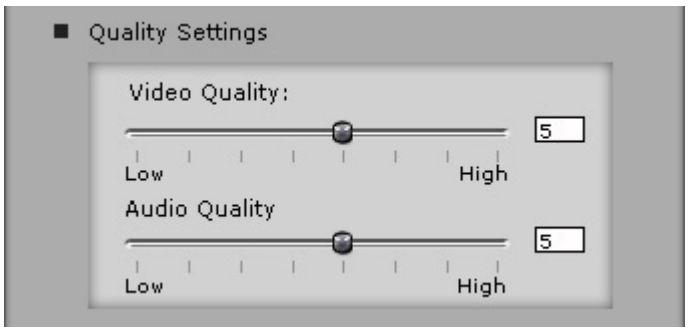
General Output Settings - Video, Widget and Web



- Check the **Export Specified Section** option if you only want to export a specific part of the project.
- Select the **Target Resolution** option if you want to specify your own target resolution. Select the desired resolution from the drop-down box. You can select from DVD or VCD with PAL or NTSC formats as well as HD formats.
- Click the **Background Color** box to select the background color from the color palette.
- Specify your own desired resolution for the output frame by entering the height and width in pixels in the **Output Size** boxes.
- Enter the desired frame rate in frames per second in the **Frame Rate** box.

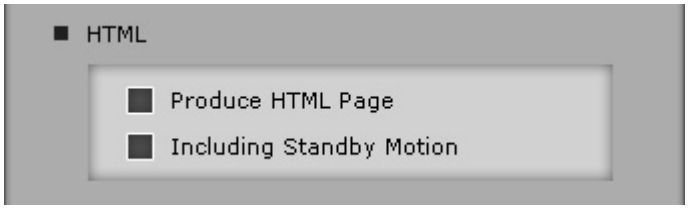
Quality Settings - Widget and Web (Flash)

If you are in **Widget** or **Web (Flash format)** mode, you may need to modify the **Quality Settings** for video and audio.
(Click the **Advanced** button in **Web (Flash format)** to show the **Quality Settings** panel.)



HTML Settings - Web

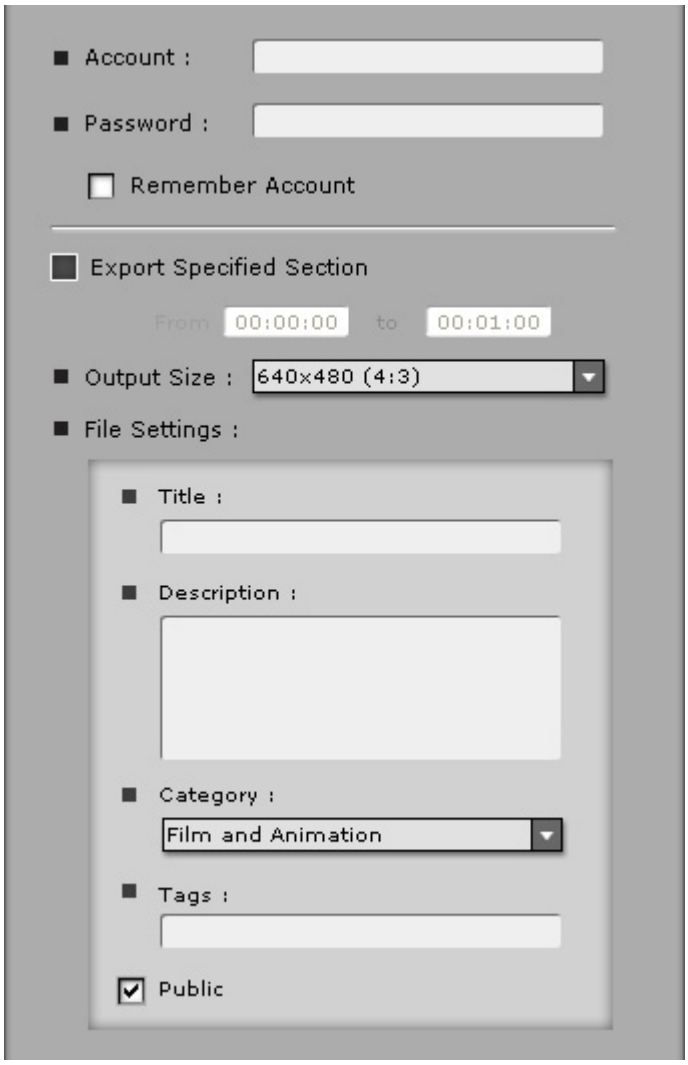
The HTML options are available if you are in **Web** mode:



- Check the **Produce HTML Page** to create an HTML page with the media content (Flash, RM and WMV) embedded in the file. The HTML file is saved in the same location as the media file.
- Check the **Including Standby Motion** so the model possesses standby motions when the media is not played.

YouTube Settings

You may need to apply for a **YouTube** account to directly upload your **CrazyTalk** project to **YouTube**.



- Type in your **Account** and **Password**. You may check the **Remember Account** checkbox so you don't need to re-type it next time for uploading.
- Specify the **Output Size** from the drop-down list.
- In the **File Settings**, type texts into the Title, Description and Tags fields.
- Choose a **Category** from the drop-down list so other users may easily find your video.
- The **Public** checkbox defines if you wish your video to be public or private on **YouTube**.
- Click the **Go to YouTube** button to open the Log on page of **YouTube** in your internet browser.

- Click the **Upload** button to start uploading the project to **YouTube**.

CREATING A CRAZYTALK PROJECT

Introducing the Project Page

You may save your creation as a project file to continue modifying whenever you want. Built-in and custom projects are stored in the **Project Gallery** for you to easily apply.

1. New/Open/Save	• : Click to create an empty new project file. • : Click to browse to and open a desired project file. • : Click to save the current project as a file.

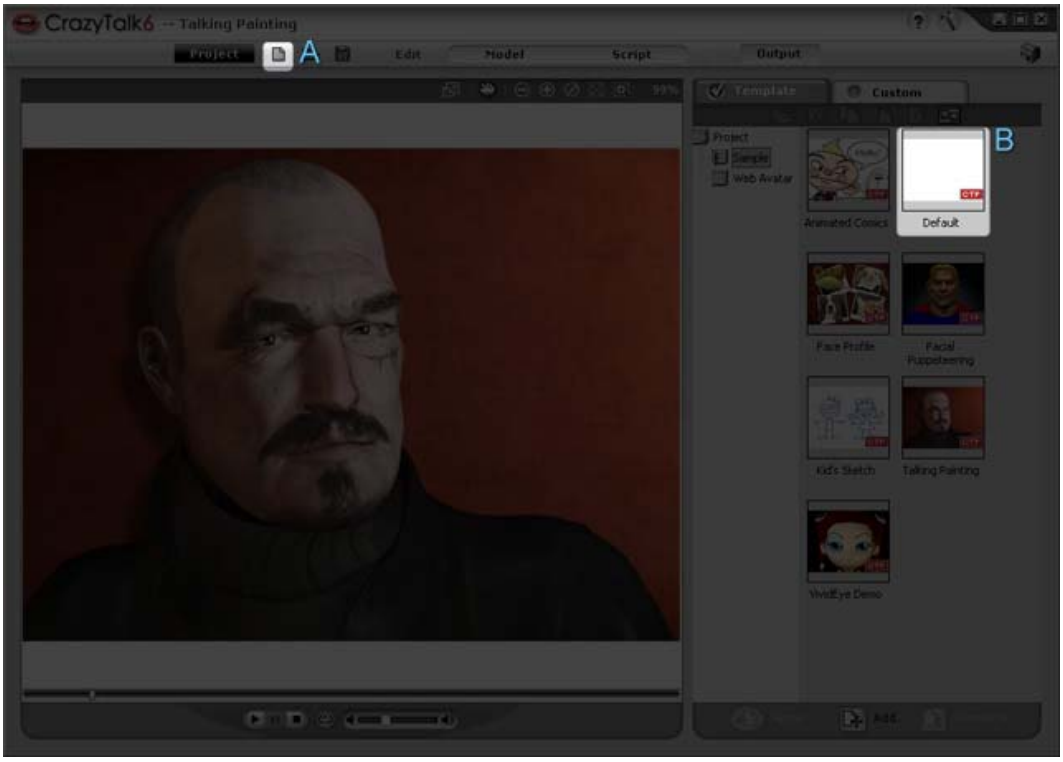
2. Project Gallery	• : Click to apply one of the project files from the Template or Custom tabs. • : Click to add the current project into the Custom tab. • : Click to overwrite the selected project in the gallery with the current project.
3. Playback Control	• : Playback script. • : Pause playback of script. • : Stop playback of script. • : Loop playback of script. • : Adjust volume.

New Project

To start a **CrazyTalk** project from scratch, you may:

A. Click the **New Project** button on the tool bar.

B. Double-click on the **Default** (empty) project thumbnail from the gallery.



Note:

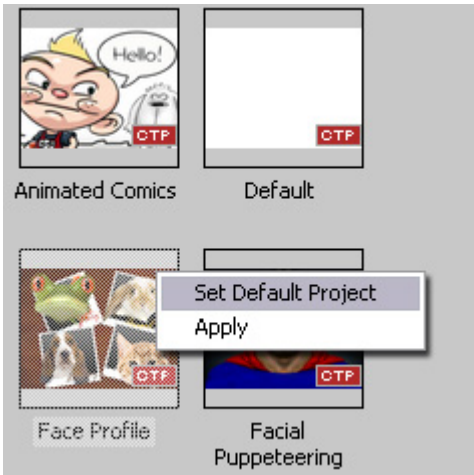
- If you do not want to start from a new project, simply load the head models from an existing project. The talking scripts are kept, and vice versa.

Setting Custom Default Project

In **CrazyTalk**, you may set any project as the default and **CrazyTalk** will load that project whenever you launch **CrazyTalk** afterwards.

Setting a Default Project

1. You need to create and Save a Project first.
2. Switch to **Project** page.
3. Browse the **Project Gallery / Custom** to display the project saved in step 1.
4. Right-click on the thumbnail of the project.
5. Select **Set Default Project** in the pop-up menu.



Re-launch **CrazyTalk** and the new default project will be loaded.

Note:

- Every project saved in the **Project Gallery** can be set as the default project.
- You may set a project as the default project in which the model or models are with/without script.

Saving a Project

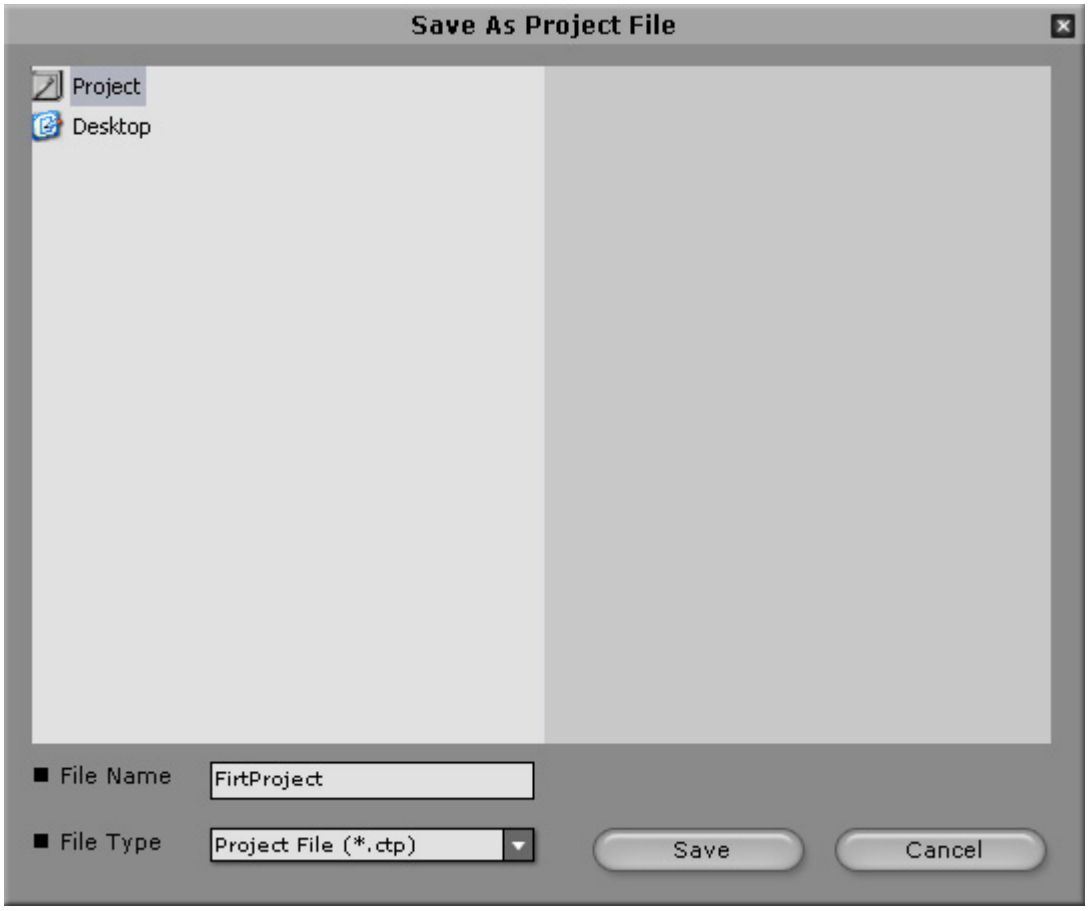
Please load an image and (optionally) modify the script for the model before saving.

Save on the Project page

1. Select the **Custom** tab in the project gallery.
2. Pick the target folder.
3. Click the **Add** button to save the current project.

Save on any page

1. Click the button anytime on any page. The **Save As Project File** dialogue will appear.



2. Specify the name for the file, select the desired folder and click **Save**.

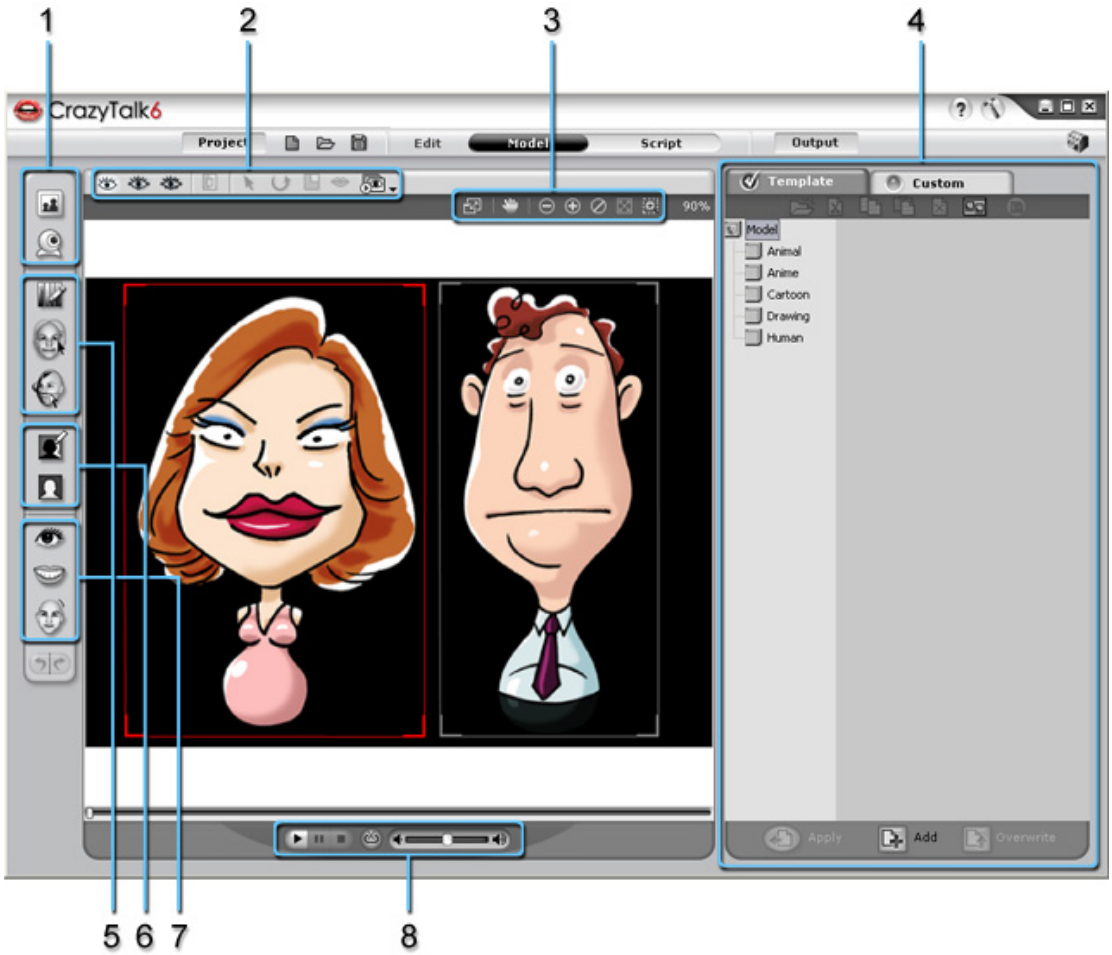
Note:

- If you click the **Save Project** button with the **Ctrl** key pressed down, **CrazyTalk** saves the ***model*** of each frame in **JPEG** format, which can decrease the size of the project file.
- If you click the **Save Project** button with the **Shift** key pressed down, **CrazyTalk** saves the **SFX** images of each frame in **BMP** format, which can accelerate the saving speed but increase the size of the project.
- Opening and saving (with the **Ctrl** key pressed down) one project file repetitively will cause the quality of the model to decrease since **CrazyTalk** opens the project in **BMP** format but saves in **JPEG** format.
- You may create subfolders under the **Project** or **Desktop** by clicking the button in the **Project Gallery / Custom** tab.
- **CrazyTalk** prompts you whether you want to save the unused script clips in the disabled character tracks on the stage. If you decide to save them, the clips can be reused when another model is added. This will cause the file size increase however.

CREATING CRAZYTALK MODELS

Introducing the Model Page

The Model page in **CrazyTalk** provides the starting point of the application. The interface features tools for image selection, image processing, wire frame fitting, profile style setting, standby motion, background mask editing, and background with camera movement. Once you select an image to be used as the model, you can use the image processing tools to enhance the quality of the image. You can then use the fitting tools to fit a wire frame to the image. This creates the talking image which can then be animated with a script along with gestures and expressions for creating a talking message. **CrazyTalk** provides 9 types of profiles to fit the models according to their characteristics. Changing the background image and specifying if the image moves along with the camera or the movement of the model is simpler than ever.



1.Import Image	• : Import image from a file or folder on your PC. • : Capture an image from your web camera if installed.
2. Fitting Tools	• : Preview Mode - Preview the results of the wire frame fitting function. • : Basic Facial Mode - Modify the wire frame using 23 anchor points. • : Detailed Facial Mode - Modify the wire frame using additional anchor points. • : Change Wireframe Color - Change the color of the wire frame to a color of your liking. • : Move the wire frame or frame components. • : Rotate the wire frame or frame components. • :Resize the wire frame or frame components. • : Open/Close Mouth Points - Open/Close the mouth points of the model. • : Calibration - Click to view the demo for various movements of facial parts.
3. Viewing Tools	• : Full Screen View - Display image in full screen view.

	• : Zoom In - Enlarge image to increase clarity. • : Zoom Out - Reduce magnification to increase the area of visibility. • : Hand - Pan across the image. • : Fit to Window - Resize image to fit it in viewing window. • : Original Size - Display image at original size and magnification. • : Drag Zoom - Drag a marquee across the image and enlarge the selected area.
4. Model Gallery	• : Create a new folder. • : Cut the model file. • : Copy the model file. • : Paste the model file. • : Delete the model file. • : Toggle between thumbnail and list mode. • : Save image as Face JPEG image. • : Apply model. • : Add image to custom models gallery. • : Update changes to the selected model

	file in the model gallery.
5. Image Processing and Fitting	• : Image Processing - Crop, rotate, mirror the image, automatic color adjustment, set color levels and color balance. • : Auto-fit Anchor Points - Automatically fit four anchor points to create the basic wire frame. • : Face Profile Style - Specify the profile style of the model and set the standby motion.
6. Background Tools	• : Background Mask Editing - Edit the background mask to specify the region of the image that does not move. • : Background Settings - Customize the background by specifying a color or choosing a background image.
7. Advanced Facial Settings	• : Eye Settings - Contains advanced settings for eyeballs, eyelashes, eye shadows and specularity. • : Mouth Settings - Contains advanced settings for teeth, oral color and lips position. • : Idle Settings - Set idle motion and the strength of it for each model.
8. Playback Control	• : Play back the script. • : Pause playback of the script.

	• : Stop playback of the script. • : Loop the playback of the script. • : Adjust the volume.

Selecting an Image

You can select an image to create a model by importing an existing image from a file/folder, or by using one of the models from **CrazyTalk's** image gallery. You can also save your models as customized models and re-use them for future projects.

Note:
• The maximum size of the source image is eight million pixels.

To choose an image to create a model, do one of the following:

- Click the **Import Image** button to import a jpg or bmp image. The Open dialog box appears. Browse to select a photo or an image file you would like to use. Click the **Open** button to open the sample file.
- Click the **Camera Capture** button to take a picture with your webcam.

i. Select the webcam you wish to use from the **Device** drop-down list.
   - (If your web camera is not on the list, please click the **Refresh** button to refresh the device list)
   - Specify the resolution from the **Resolution** drop-down list.
   - Click the **Capture** button to take a picture with the selected webcam.

- (The content of the preview window will be captured and displayed on the right pane)
- Click the **OK** button to confirm the captured image and exit.

Image Processing

The image processing tools allow you to enhance the quality of the selected image, rotate it, or crop it to use only a portion of the original source image. This allows you to focus specifically on the facial details within an image and results in more accurately talking images.

Click the **Image Processing** button to open the image processing tools and enhance the image.

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

Cropping an image

Click the **Crop Image** button to select only the required image area. This can be useful when you want to select a face from a group photo or remove a large background area which is not needed for the model. Cropping the image allows you to remove excess background area and enlarge the facial image you wish to turn into a moving image. This does not change the original image size.

Drag a marquee across the image using the mouse to create a crop box. Use the corner handles of the marquee to rotate the crop box. Use the mouse to move the crop box across the image as desired. Click the button when done. Click the button to cancel the current crop box and restart.

Rotating an image

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

Mirroring an image

Click the **Mirror** button to mirror the image on the horizontal axis. This function is useful for images obtained from scanners or cameras.

Adjusting color levels automatically

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

Adjusting color levels manually

Click the **Color Level** button to adjust the brightness, contrast, hue, and saturation levels of the image manually. 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.

Adjusting color balance

Click the **Color Balance** button to adjust the color balance manually. Drag the sliders to adjust the **Cyan - Red**, **Magenta - Green**, and **Yellow -Blue** levels. The box next to each of the respective properties shows positive or negative values depending on the position of the slider, with the center being zero. Select the **Highlights** radio button to apply the color settings to the image's brighter areas. Click the **Midtones** radio button to apply the color settings to the image's regular

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

Creating Multiple Heads

Your desired photo or image might contain one or more persons. With earlier versions of **CrazyTalk**, it was necessary to use a video editor to combine several videos with one speaker into a conversation.

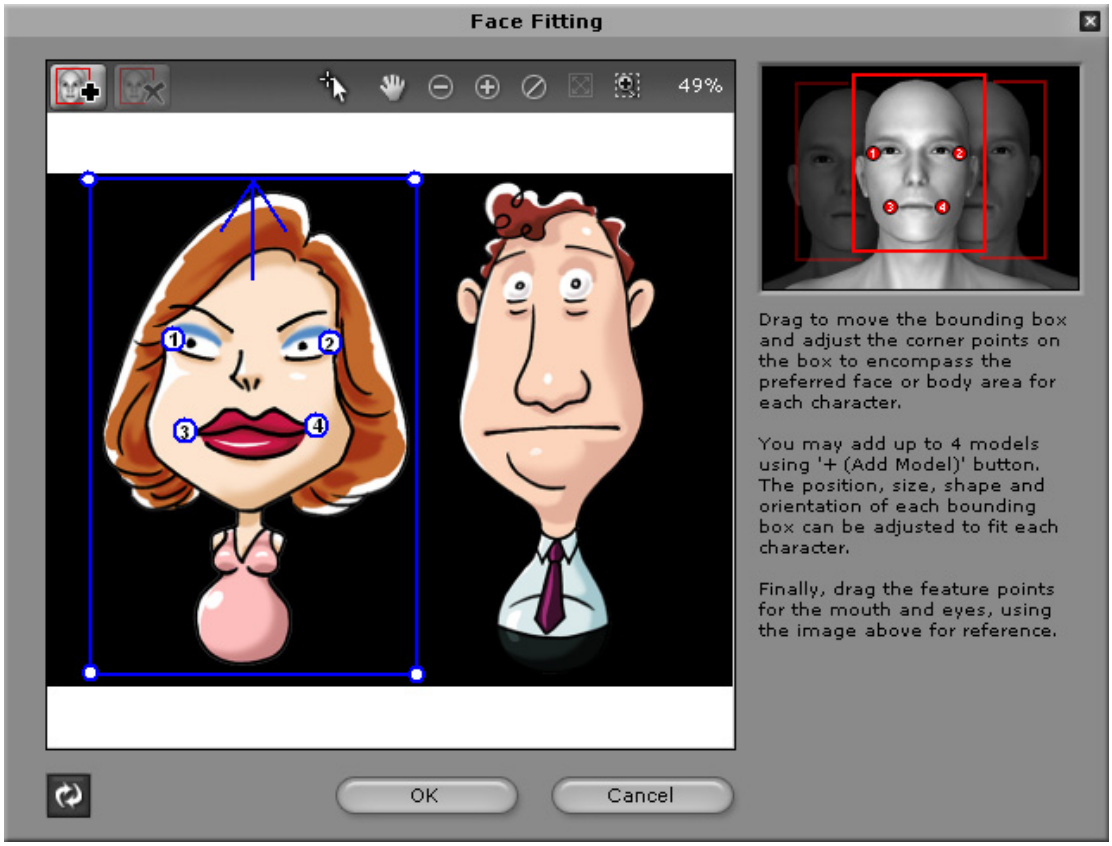
In **CrazyTalk 6**, however, you may add up to four models to generate scenarios with conversations, which facilitates the creation of a conversation without another video editor.

Basically, every project always possesses at least one model. If you wish to add more models, please follow the steps below:

Creating Multiple Heads

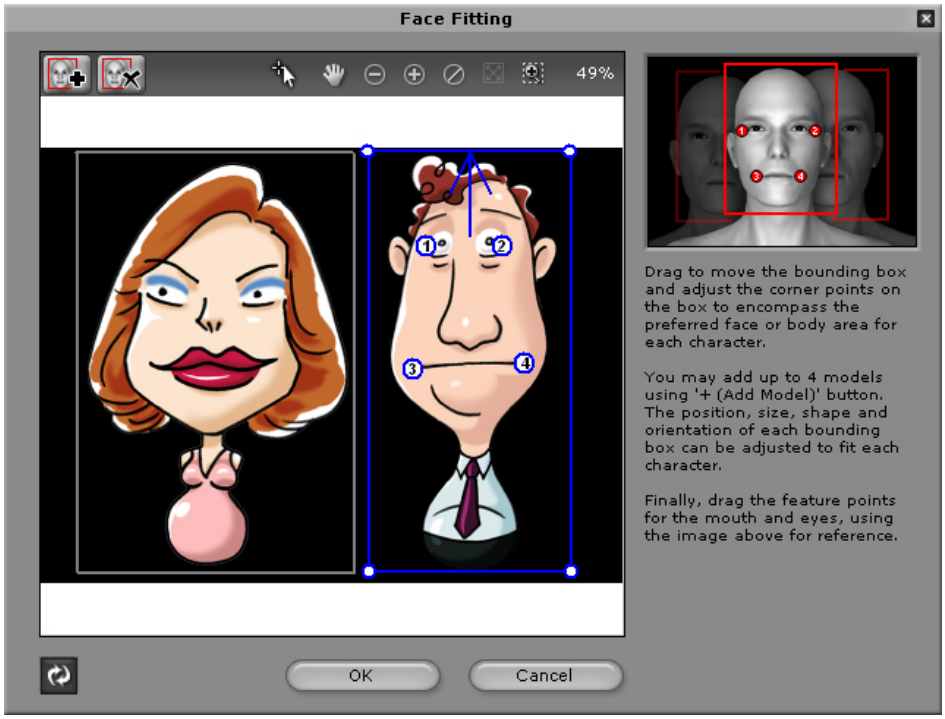
1. Click the **Model** button at the top of the main program.

1. Click on the **Face Fitting** button.
2. The **Face Fitting** panel displays.



3. Click the **Add Model** button.

4. Drag on the preview window to frame out the range for another model (you may repeat the steps to create up to four models).



5. Click the **OK** button to confirm and exit.

6. More models are generated on the **Model** page.

Picking Target Model

To select a model:

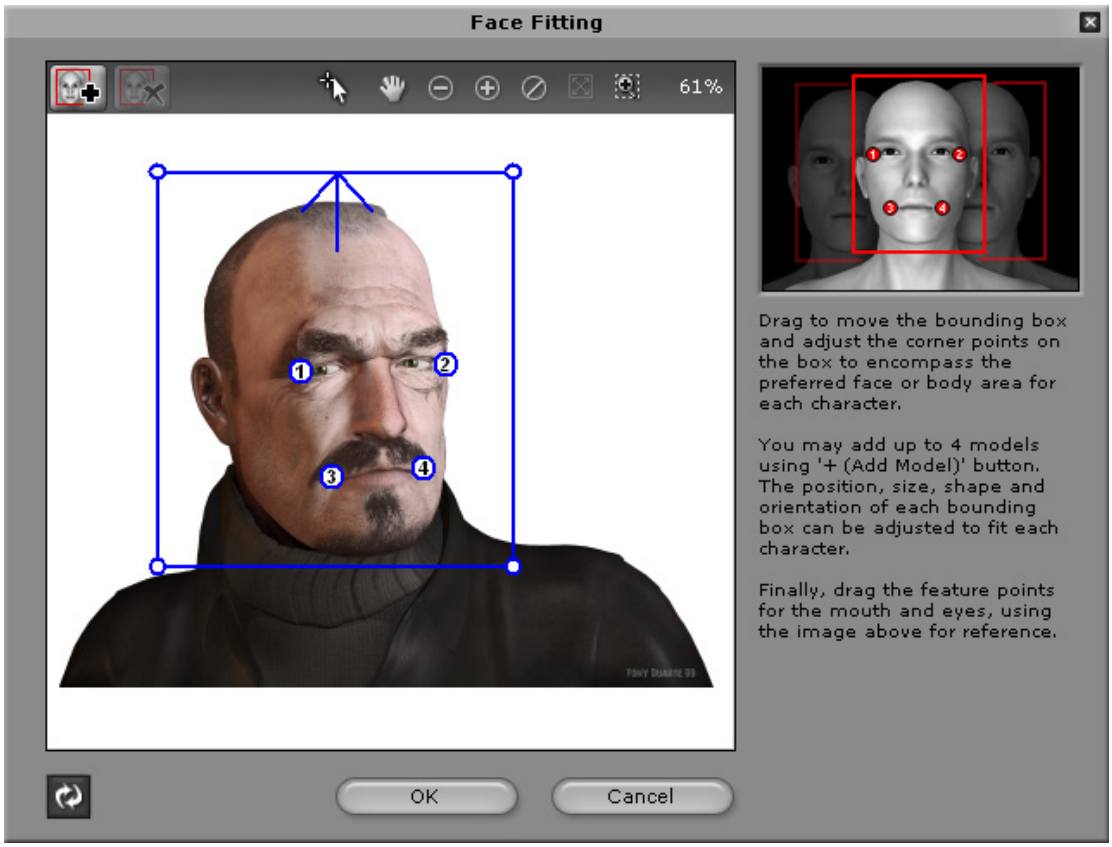
- In **Preview Mode** , click on the target model directly to select it.
- In **Basic Facial Mode** or **Detailed Facial Mode** , click on the **Select** tool before selecting the target model.

Note:
o Please refer to the following sections for more information: Wire Frame Mode - Character Frame and Head Frame Editing the Background Mask Defining Background Mask for Entire Character o The frames of the models are not allowed to overlap with each other.

Automatic Image Fitting

The 4-point auto fitting for the four basic anchor points allows you to create a **CrazyTalk** model in a matter of a few mouse clicks. This process is entirely automatic and requires no complex frame fitting techniques. Once you create a basic frame to fit the face, you can use the fitting tools to increase the accuracy of the wire frame by adjusting the frame points with more precision.

Click the **Face Fitting** button to fit the wire frame to the face automatically using the four basic anchor points for the eyes and mouth. The following auto-fitting dialog box pops up.



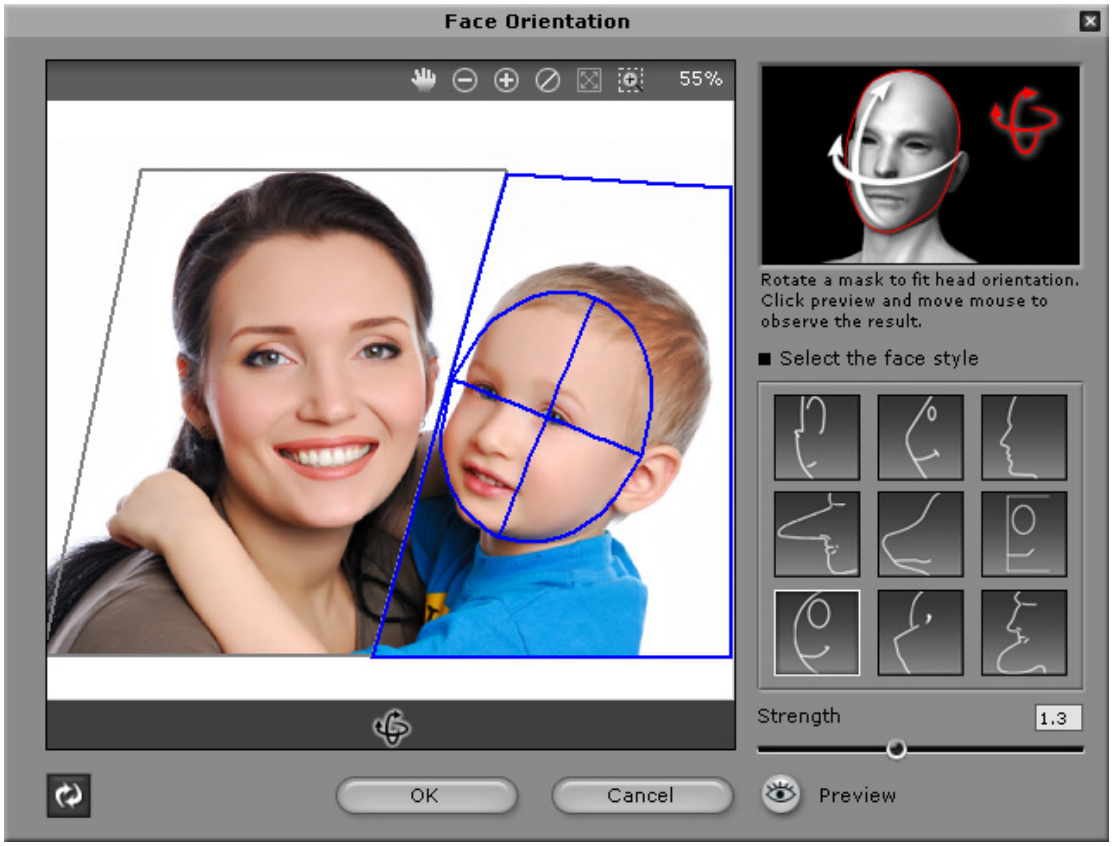
CrazyTalk shows its own estimation about the position of the four points defining the eye and mouth positions. If you are not satisfied with the positions, click and move the numbered indicators 1, 2, 3 and 4 on the image to adjust the four points for the fitting process as displayed on the sample image. Click the **Reset** button at any time to cancel your actions and start over.

Note:

- Adjust the four points as close to the correct position as possible to get the best fit for the eyes and mouth features. Do not worry about precise details at this time. Use the wire frame fitting tools for a more accurate wire frame to fit the face with the highest degree of precision.

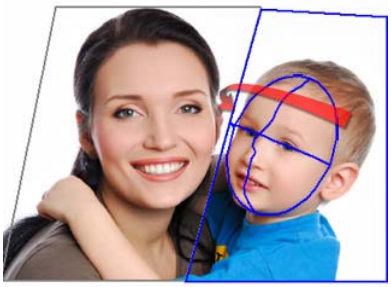
Specifying Face Orientation and Style

Click the **Face Orientation** button to adjust the profile style and define the face orientation of the model:



Defining the 3D Face Orientation

- Utilize the **Rotate** tool to fit the angle of your model's face. It ensures the 3D mesh of the head to match the facial angle of the character in the photo to generate the best result of the head rotation animation.

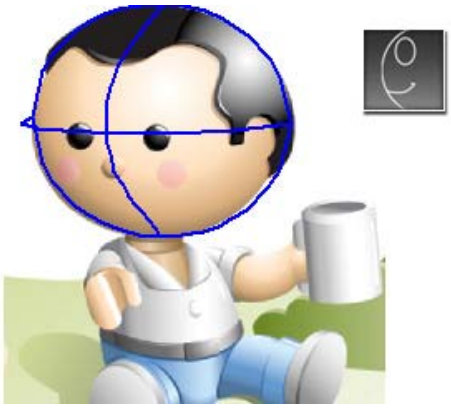
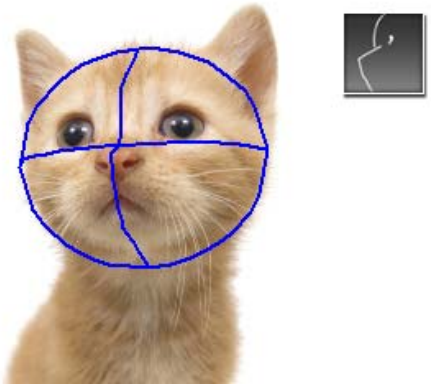


Rotate the mesh to fit the face angle

Selecting Appropriate Face Style

1. Select one of the 9 basic profiles to fit your model in the loaded image.

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

Examples	
	

Wire Frame Mode - Character Frame and Head Frame

CrazyTalk automatically generates the wire frame surrounding the face according to the 4 points you set in the **Multiple Models** panel. The points and lines define the model's range in the image and how the facial features of the model in the photo are mapped to the ones of the 3D virtual head.

Character Frame and Head Frame

The frame of a model can be divided into two parts, **Character Frame** and **Head Frame**.

Character Frame

The character frame (quadrilateral wire) defines the **Primary Mask** of the project. Whenever you replace the background with a solid color or an image, the primary mask retains the color of the original image.

Please ensure that the character frame covering the whole head and body defines only the correct character transformation area, and that the facial animation does not exceed the effective range.

Character Frame	**Primary Mask (screen area) Defined**

Background Replaced with Image

Head Frame

It defines the head area of the model, includes the facial features, the nose, the mouth, or even objects such as hair or long ears that are attached to the head. Please refer to Hair Mesh Layer for more information.

Basic Facial Mode and Detailed Facial Mode

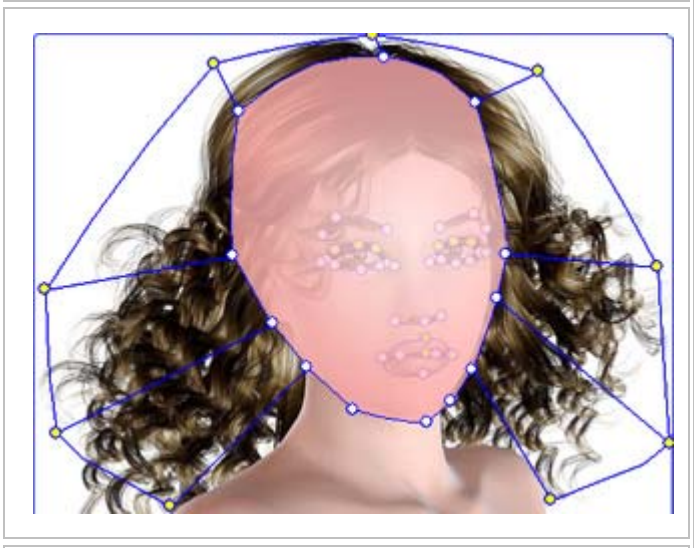
You may click the **Basic Facial Mode** or **Detailed Facial Mode** button to view the wire frame and drag the control points or lines to fit a character's face much more precisely.

Basic	Detailed

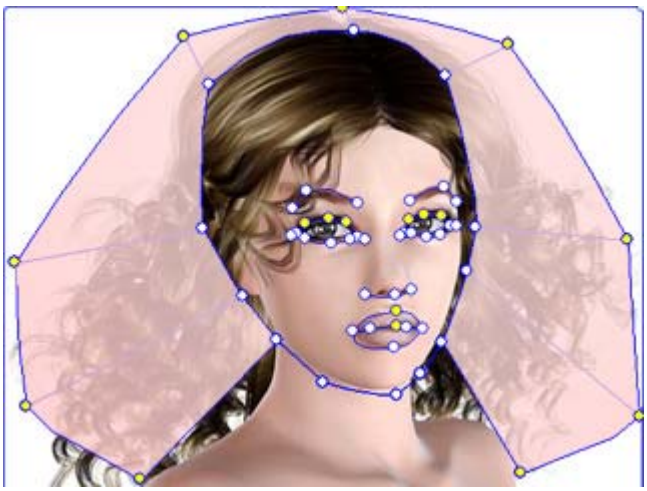
Hair Mesh Layer

The character in the photo may not always be oval-shaped due to hair styles, accessories like hats, or even the ears (of animals) for example. **CrazyTalk** provides a **Hair Mesh Layer** so that you may separate the ranges of the skull and of the objects attached to the skull into different layers.

Character with fluffy hair



Skull mesh

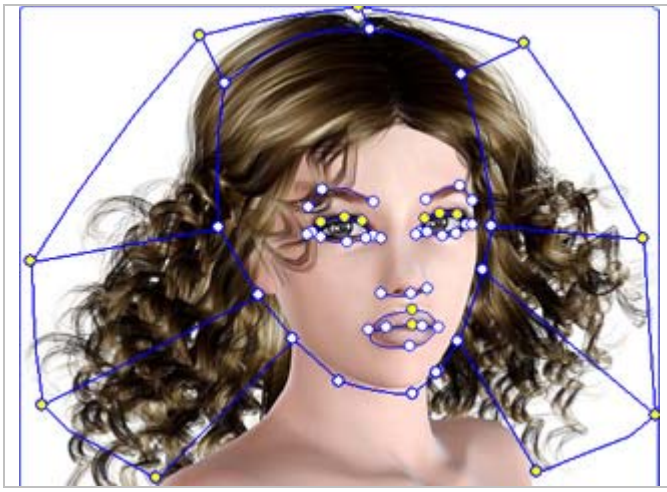


Hair mesh

Characteristics and Benefits of the Hair Mesh Layer

- As the model's head is rotating, the skull mesh rotates and tilts tremendously while the hair mesh only moves mildly.
- The hair mesh layer protects the model from distortion and breaking as the model's mouth opens or the head rotates severely.

CrazyTalk6



Character with hair mesh

Smooth mouth shape

Smooth head shape

CrazyTalk5 / Earlier Version

Character without hair mesh

Mouth shape stretches or breaks

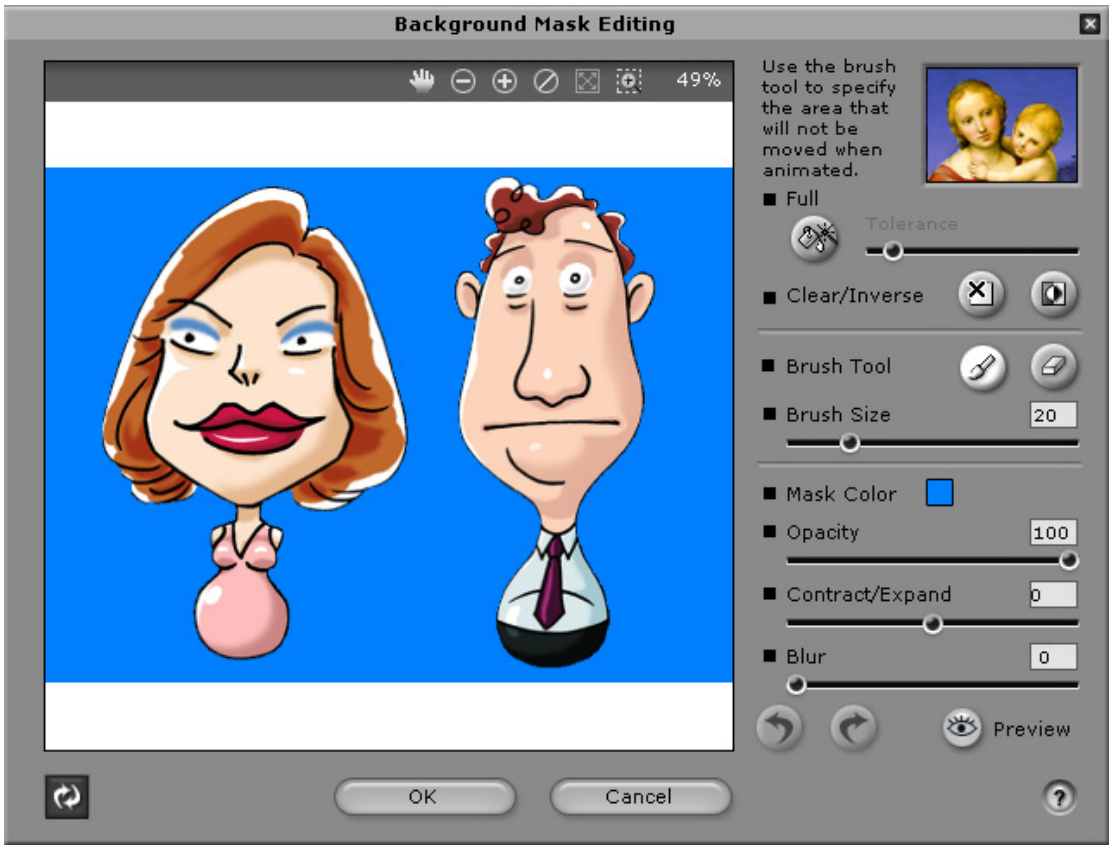
Head shape distorts or breaks

Editing the Background Mask

The background mask area is the area in the image that does not get moved or animated during playback of the animation script. There are two methods to generate a background mask for your image.

Using Background Mask Editing Panel

Click the **Background Mask Editing** button to modify the background mask. The background mask, also known as the alpha channel, controls the transparency of TGA or PNG images.



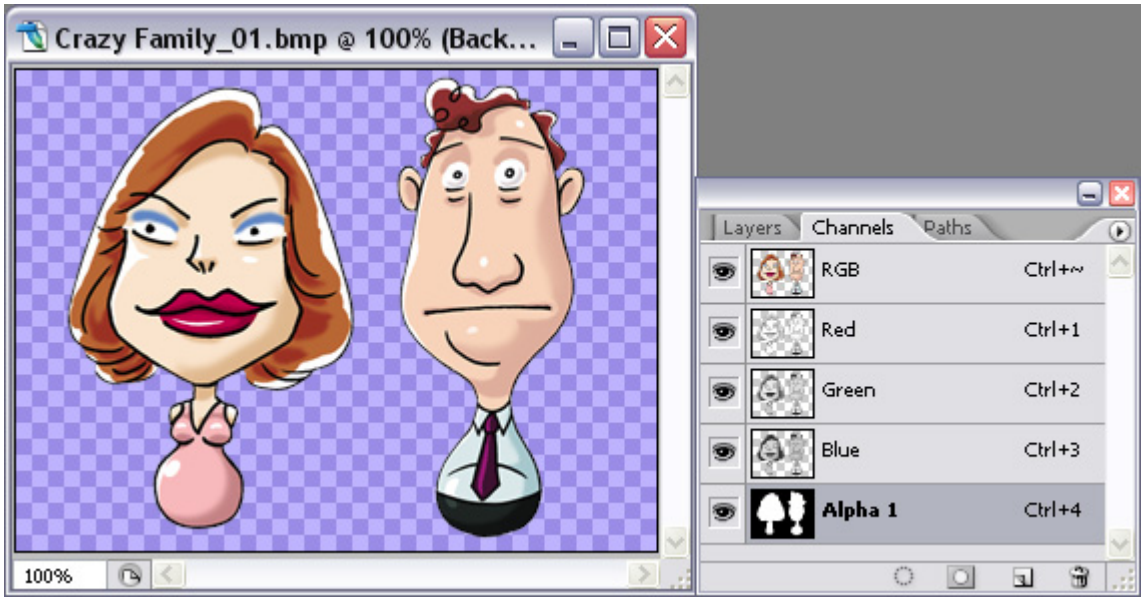
- Click the **Full** button and click on the image to fill the area with the mask color. You can adjust the **Tolerance** slider to increase or decrease the background mask over the complete image area.
- Click the **Clear** button to delete the background mask.
- Click the **Inverse** button to invert the background mask area. The area that was previously defined as the background mask and the animated area

are exchanged.

- Use the **Brush Tools** to specify whether you want to increase or decrease the background area. Click the **Paint** button if you want to enlarge the background area or add more parts to it. Click the **Erase** button to erase parts of the background mask.
- Adjust the **Brush Size** slider to increase or decrease the size of the brush tool. Use a thinner size when you want to change only small areas of the background mask. Alternatively, enter a number in the box next to the slider to specify the brush size.
- Click **Mask Color** to specify the color for the background mask using the color palette. The mask color does not actually show up on the model; it is for your reference only.
- Move the **Opacity** slider to specify the opacity of the background mask. The mask opacity does not actually show up on the model; it is for your reference only.
- Move the **Contract / Expand** slider to contract or expand the background mask.
- Move the **Blur** slider to blur the background mask.
- Click the **Preview** button to view the results of your editing.

Loading an Image with Predefined Alpha Channel

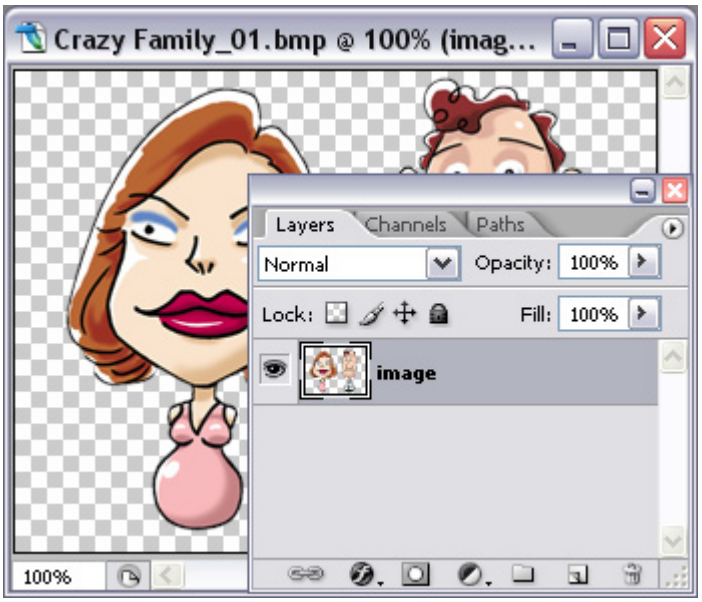
If you want to perfect the mask, you can save your desired image with pre-defined alpha channel by means of an external image editor and then load the image into **CrazyTalk**. The alpha channel information will be automatically applied as the background mask in the **Background Mask Editing** panel.



Adding and editing alpha channel in image editor (e.g. Photoshop)

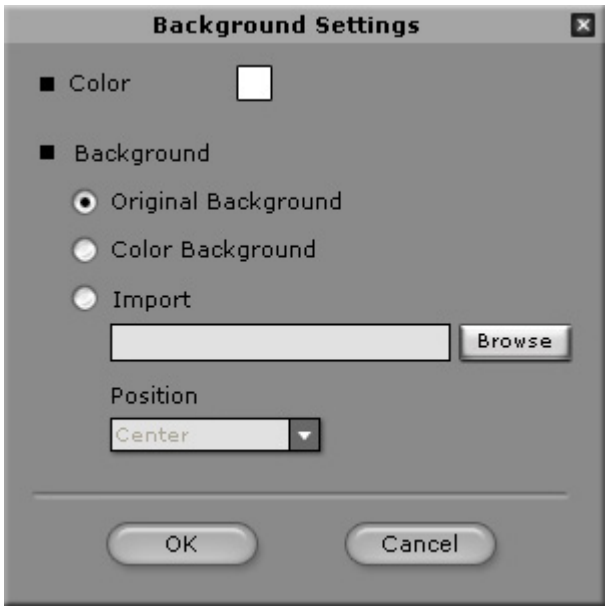
Note:

- The image with alpha channel information can be in 32-bit BMP, TGA or PNG format.
- If you want to save the source image as PNG file, please 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.



Configuring the Background Settings

You can add your own background image or a background with the color of your choice using the Background Mask Settings. Click **Background Settings** to specify the background color or image.



- Click **Color** to specify a color background. Select a color from the color palette displayed.
- Check **Original Background** if you want to leave the background unchanged.
- Check **Color Background** to use the specified color as the background color.
- Check **Import** to choose your own background image. Click **Browse** to specify the name and location of the image.
- Specify how you want the image to be placed using the **Position** drop-down box.

The original look	Define the background area

Image imported as the background	The result

Defining Background Mask for Entire Character

The wire frame of each model is divided into two parts, the **Character Frame** and the **Head Frame**.

Character Frame

- The **Character Frame** (quadrilateral wire) defines the primary mask of the whole project.
- As soon as the background is set to a solid color or image, the part of the project covered by the primary mask is replaced with the color or image.

Character Frame	Primary Mask (Screen Area)	Primary Mask reveals Background Image

- You may modify the four corner points in the wire frame mode to define the primary mask area.

Character Frame Modified	New Primary Mask	New Primary Mask reveals Background Image

Fine-Tuning Background Area with Background Mask

Since the primary mask defined by the **Character Frame** can only be quadrilateral, you may use the **Background Mask Editing** feature to fine tune the area that will reveal the specified background image. Please refer to Editing the Background Mask and Configuring the Background Settings for more information.

Part of Background Image Revealed by Primary Mask	Fine Tune the Mask in Background Mask Editing Panel	Result

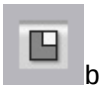
Introducing the Fitting Tools

The auto-fitting of the four anchor points for the eyes and the mouth are used to create an approximate wire frame that fits the face. The fitting tools provide more control over the frame components and allow you to position them with more precision.

Click the **Basic Facial Mode** or **Detailed Facial Mode** button to fine tune the fitting process. The basic model provides 23 points on the wire frame and the detailed model provides additional points on top of those to adjust the wire frame. Move the individual points and resize the wires to ensure that the wire frame fits the image to the highest degree possible. Note that you can move the points in all directions. Experiment with the frame fitting with various images to get more practice and see what kind of frame produces the most realistic talking image.

Use the wire frame tools on top of the preview window as follows:

- Click the **Change Wireframe Color** button cycle through different wire frame colors. This can be used if both the original image and the wire frame color are dark which makes it more difficult to correctly fit the wireframe.
- Click the **Select** button to pick and move components of the wire frame. This is selected by default. You can move the wires that connect the frame points or the individual wire frame points by using the mouse to select the component. The mouse cursor changes its appearance when you move over the wire or the wire frame points. You can also move the frame points along the wires to 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.
- Click the **Rotate** button to rotate the wire frame or the frame component (wire). To use this tool, first select a frame component or a wire using the **Select** tool. The selected wire will turn red. Next, click the **Rotate** button. Hold and rotate the mouse over the image in clockwise or counterclockwise direction to rotate the selected frame.

- Click the **Scale**  button to adjust the size of the wire frame. To use this tool, first select a frame component or a wire using the **Move** tool. The selected wire will turn red. Next, click the **Scale** button. Now position the cursor over the image and drag up or down to increase or decrease the size of the wire.

- Click the **Close Mouth Points** button to close the mouth points of the wire frame. This will cause the points for the upper and lower lip to move together as a single line. If your model has a closed mouth we suggest you use this option. This option is available only when you select the **Detailed Facial Mode**.

- Use the **Zoom In** , **Zoom Out** , **Hand** , **Fit to Window** , **Original Size** , and **Drag and Zoom** tools to enlarge the image and achieve a more precise fitting for all the anchor points. To use the drag and zoom tool, drag a marquee across the image to enlarge that part of the image. Press the **Full Screen View** button or the F11 key for a full screen view. Press the Esc key to exit full screen view.

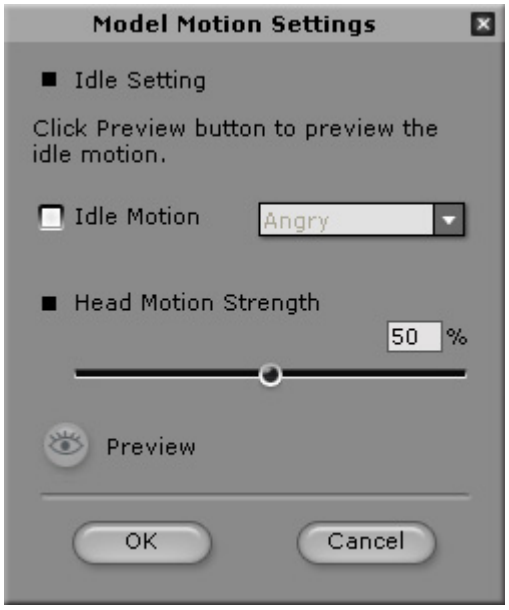
- Check your fitting results periodically by clicking the **Preview Mode** button while adjusting the wire frame

- Click the **Calibration** button to play back a short script intended for calibration purposes. Click the down arrow next to it if you wish to select a specific part of the face to be tested. Use the playback control buttons (, ,) at the bottom of the preview window to control playback of the sample script. The sample script consists of different expressions, gestures and voice types to allow you to see if the talking image is fitted properly.

Specifying Idle Settings

When a conversation happens in **CrazyTalk**, you may have the mute model sway or breathe rather than being all stiff and still. Every model can have its individual idle motions, which can make your story more life-like.

1. Select the model you wish to assign idle motions to in the **Model** page.
2. Click the **Model Motion Settings** button. The **Model Motion Settings** panel displays.



- Check the **Idle Motion** checkbox and select the desired motion from the drop-down list. The motion is used when the model is silent or in standby mode.
- Adjust the **Head Motion Strength** slider to adjust the intensity of head movements.
- Click the **Preview** button to preview the head motion. If the motion is not as desired, you can adjust the **Head Motion Strength** slider or tune the facial feature points again.

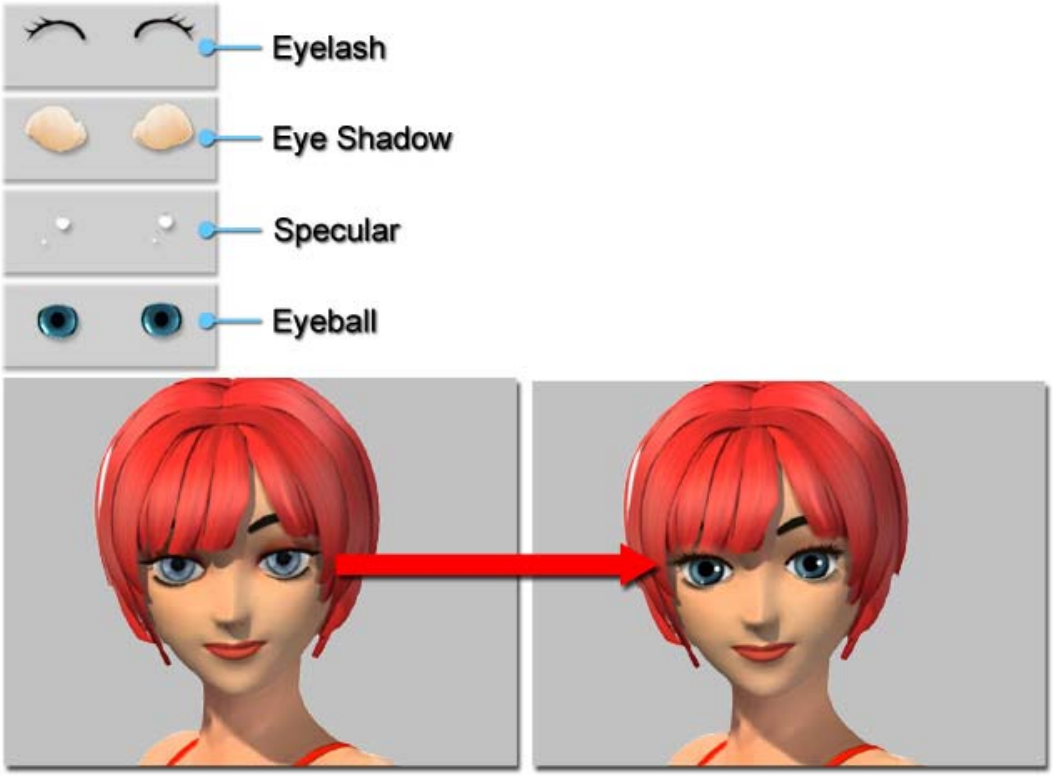
ADVANCED FACIAL SETTINGS

VividEye Technology

CrazyTalk introduces the **VividEye Technology** in a layer-based concept. The 4 Layers (Eyelash, Eye Shadow, Optics, Eyeball) of **VividEye** Settings greatly increase the realism of virtual eyes while **EyeMagic** (Eyelash and Eye Shadow) adds cosmetic effects with various adjustable colors, lash sizes and style controls.

VividEye Technology

The four layers define the looks of eyelash, eye shadow, optics and eyeball:



Eye Template Gallery

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

Apply Virtual Eyes

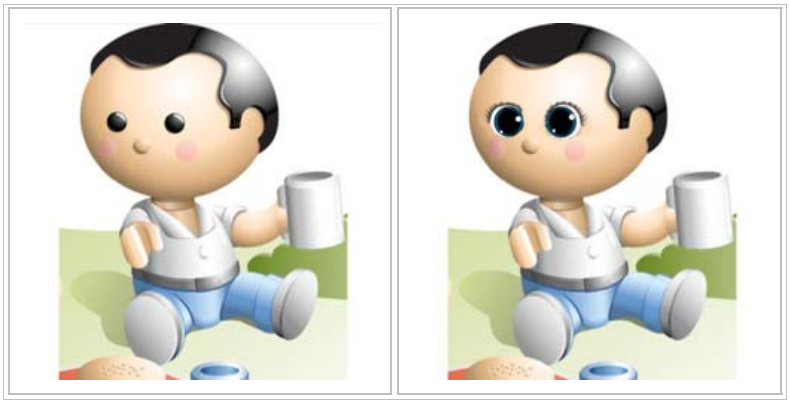
1. Select a model for applying virtual eyes. Click the **Eye Settings** button.
2. Choose a desired eye category from the **Eye Style** drop-down list, the gallery updates accordingly.
3. Select a desired eye template from the gallery to apply to the current model.
4. If you are satisfied with the result, click **OK**. If you wish to adjust the advanced eye settings, select the **Modify** radio button.

Note:

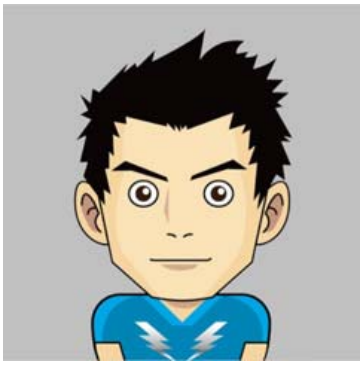
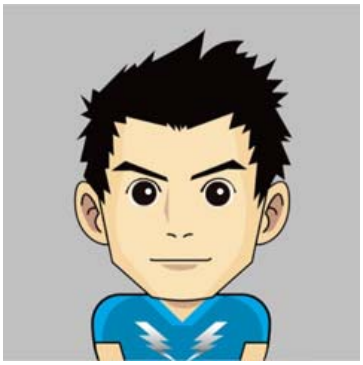
- **Apply Eye:** Check this box if you wish to apply virtual eyes settings from the **Modify** page.
- **Eye Motion Preview:** Toggle this button any time and move your mouse to preview the eye motion.

Cartoon Character

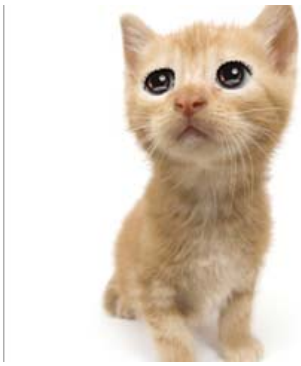
Original Eyes	Virtual Eyes Applied



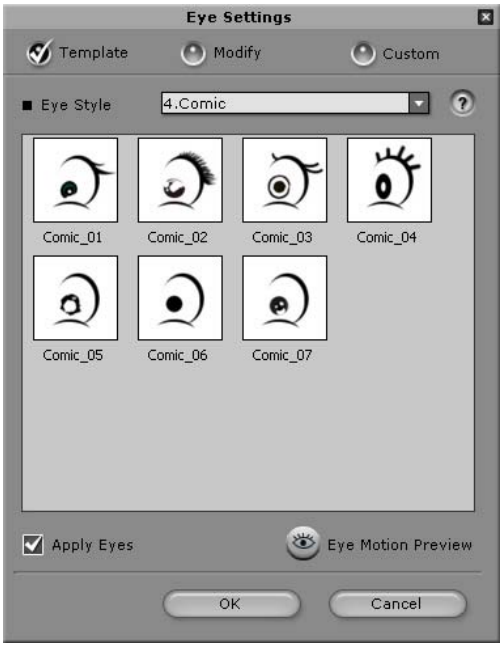
Anime Character

Original Eyes	Virtual Eyes Applied
	

Animal

Original Eyes	Virtual Eyes Applied
	

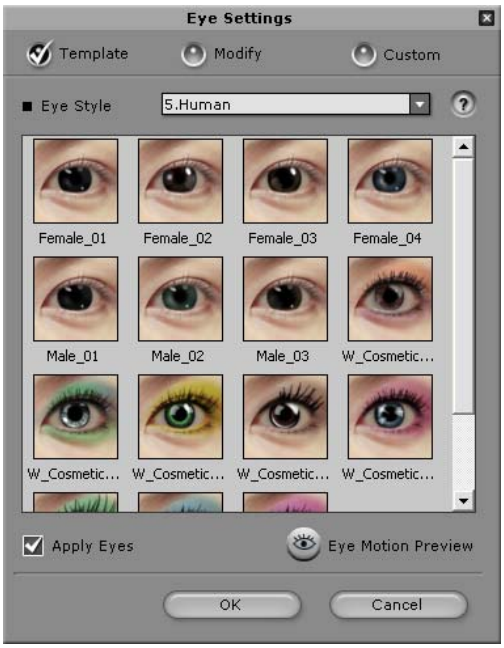
Comic Character



Original Eyes	Virtual Eyes Applied

Human

This gallery contains natural eye templates for male, female, and female color cosmetics.



Original Eyes	Virtual Eyes Applied

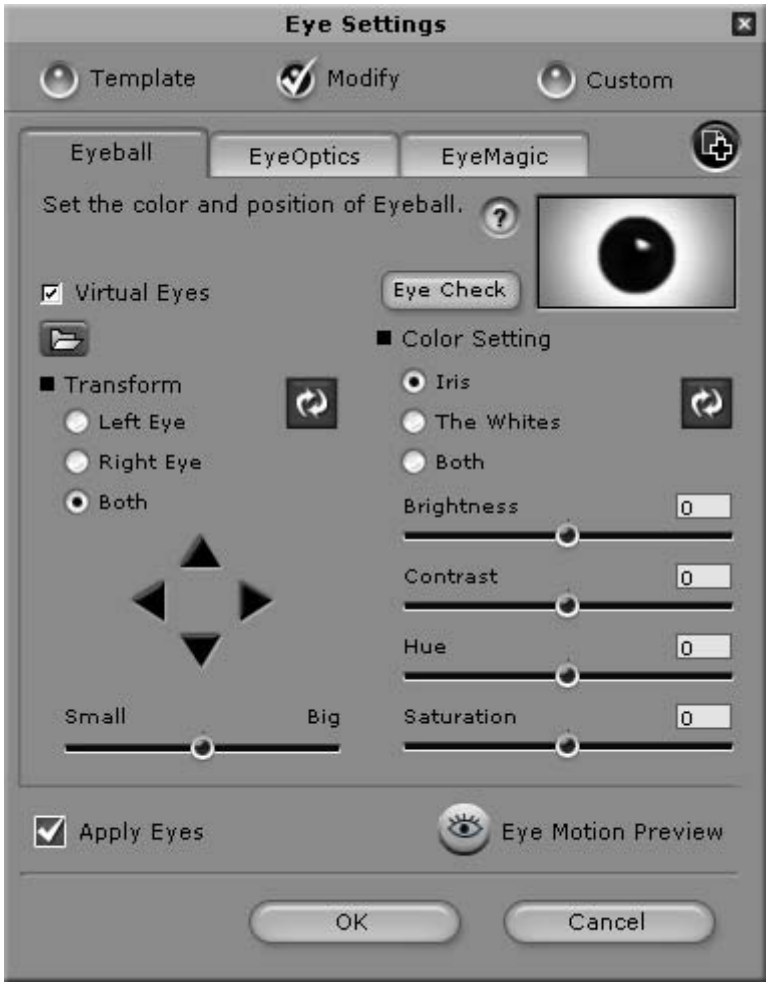
Eye Settings - Eyeball

You can replace the original eyes of your model with virtual eyes for a more exotic effect. With a virtual **Eyeball**, the model can look around the environment as he/she speaks. You may adjust the size of the irises to endow the model with different characteristics such as romantic, profound depth, evil or dullness. **CrazyTalk** contains a gallery with various eye templates with different irises styles which are suitable for animals, humans, 2D comic or 3D animation characters. Click the **Eye Settings** button in the **Model** page to add virtual eyes.

Modifying Eyeballs

After applying an eye template, you may wish to fine tune the appearance of the eyeballs.

1. Select the **Modify** radio button.
2. Choose the **Eyeball** tab.



- Uncheck the **Virtual Eyes** box if you want to retain the original eyes in the image but wish to use the **EyeMagic** effects.

Virtual Eyes OFF	**Virtual Eyes ON**

- Click and keep the **Eye Check** button pressed to compare the original eyes with the virtual eyes. Use it as a guide to fine tune the eyes for natural results.
- To set the position of the eyeballs, use the **Transform** feature. Click the ▲/ ▼/ ◀/ ▶ arrows to move the eyeballs after selecting the **Left Eye**, **Right Eye** or **Both** option. Click the **Reset** button to clear your displacement settings and start adjusting again.
- Use the **Size** slider to adjust the size of the eyeballs.

Big Eyeballs	**Small Eyeballs**

- Use the **Color Setting** feature to adjust the color of the eyes. Select the **Iris**, **The Whites**, or **Both** options to select which part of the eye you want to modify. Use the **Brightness**, **Contrast**, **Hue** and **Saturation** sliders to adjust the eye color. Alternatively, enter a number in the boxes next to the sliders to change a parameter. Changes you make can be seen immediately in the image window. Accurately match the darkness of the virtual eyes with the darkness of the original eyes. Click the **Reset** button to clear your color settings and start adjusting again.

Iris Color Modified	**The White Modified**

Creating Custom Eyeballs

You may create your character's eyeballs by importing a custom eyeball image:

Before Importing Custom Eyeball Image

1. Click the **Import** button.
2. Locate the texture image for the virtual eyes. (jpg, bmp, tga, png are supported, 256 pixels x 256 pixels recommended)

Note:
It is **not recommended** to import an image with any alpha channel information since the alpha channel will be transparent and you will see the background image through it.

3. Click the **Open** button to apply the selected image file.

After Importing Custom Eyeball Image

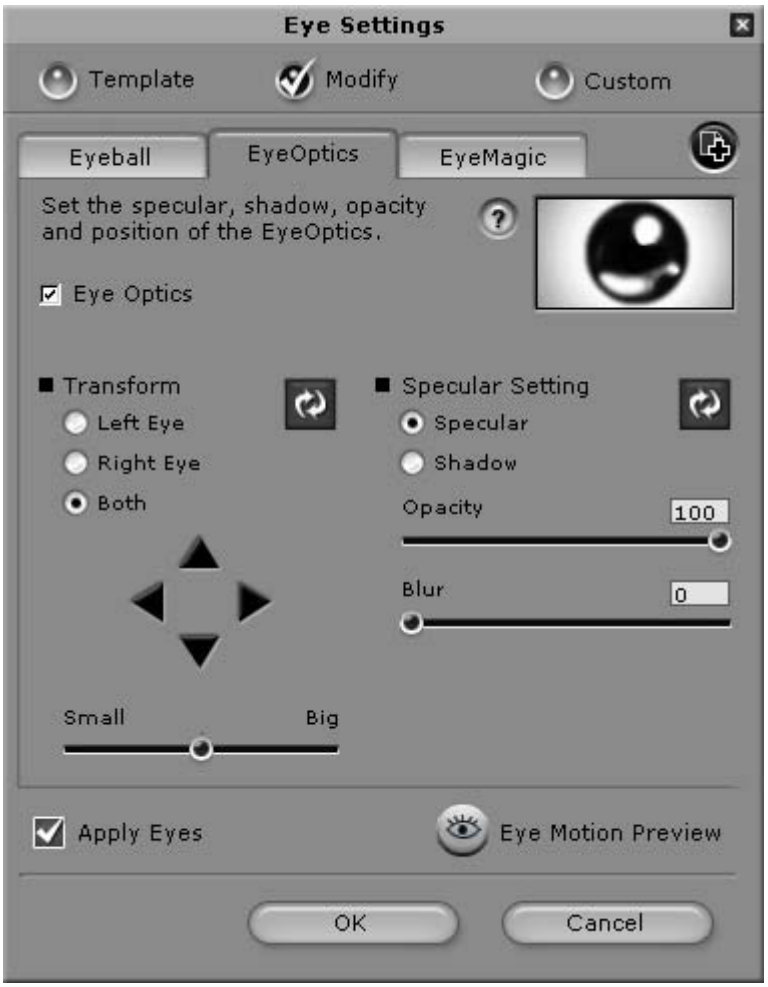
Eye Settings - EyeOptics

The **EyeOptics** simulate the specularity and shadow effects on the eyeballs, which implies the spirit of the eyeballs. You may then generate brilliant eyes by increasing the specularity to add clarity to the eyeballs or add pale and dull effects to the eyes. This feature facilitates you with creating sparkling, crystalline, or turbid eyeballs.

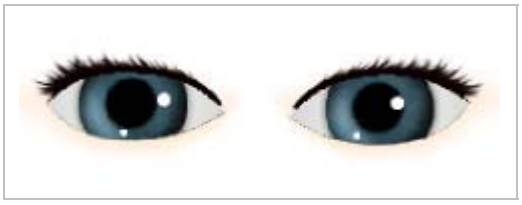
You must apply an eye template from the eye gallery first.

Applying Eye Optics

1. Select the **Modify** radio button and click the **EyeOptics** tab.



- **Transform:** Use the controls to set the position or size of the specular spot on the eyeball.

	
Default Position/Size of the Specular	Scaled Up

Position Adjusted

- **Specular Setting:** You may decide the strength of the **Specular** and **Shadow** effects on the eyeballs.
- Please note that the **Shadow** effect simulates the shadow that is cast onto the eyeballs by the eyelids, which makes the eyeballs more sphere-like. Therefore, it can not be resized or re-located.

No Shadow Effect	Shadow Applied

2. Check the **Eye Optics** box to apply the effect to the eyeballs.

Eye Optics Off	Eye Optics On

- **Transform:** You may use the transform tools to adjust the position or the size of the **Specularity**.
- **Specular Setting:** The **Specular Setting** specifies the clarity of the eyes. Utilize the radio buttons and sliders to define the level of **Opacity** and **Blur** for the **Specular** or **Shadow** effects.

Clear Eyes (Opacity=100; Blur=0)	Turbid Eyes (Opacity=90; Blur=50)

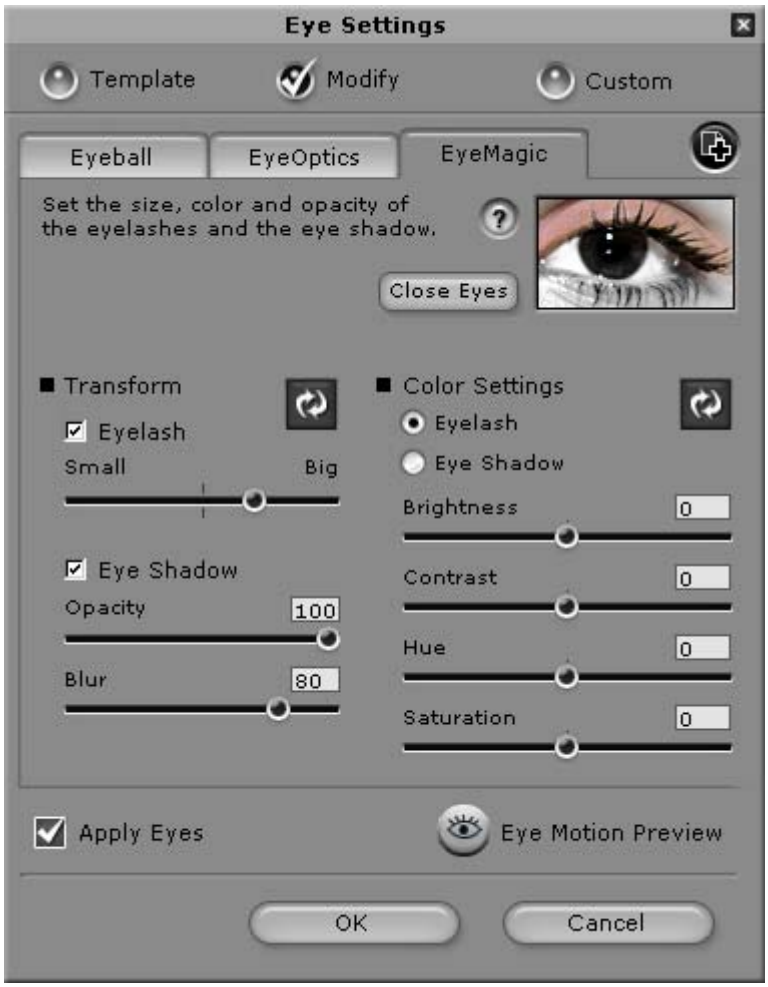
Note:

- The transform of the specularity implies the direction and distance of the lighting source.
- The **Transform** data of the **Specular** effect can be adjusted individually while the **Specular Setting** affects the **Specular** and **Shadow** for both eyes.

Eye Settings - EyeMagic

CrazyTalk offers you **Eyelash** and **Eye Shadow** effects to generate more vivid appearance of eyes. You may apply the **Eyelash** effect to mimic mascara to enhance the eyelashes of the model. Increasing the volume of the lashes may allure more attention and create more dramatic expressions as the model speaks and blinks. With the **Eye Shadow** feature, you may generate various make-up styles such as the Smokey, golden shimmering or bruise eyes according to your scenarios. You can also use it to concealer or cover creases or defects on the models' eyelids. Furthermore, distortion or stretching issues as models close their eyes can be covered with **Eye Shadow** effects.

You must apply an eye template from the eye gallery and click the **Modify / EyeMagic** tab for further adjustment.



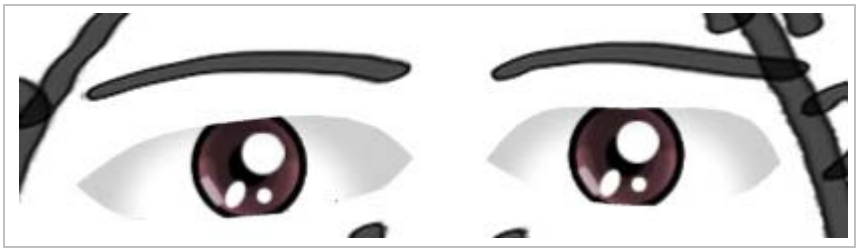
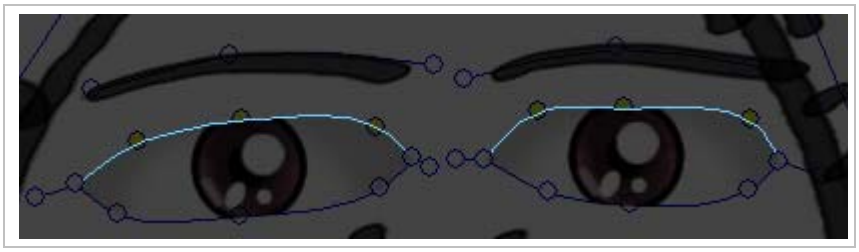
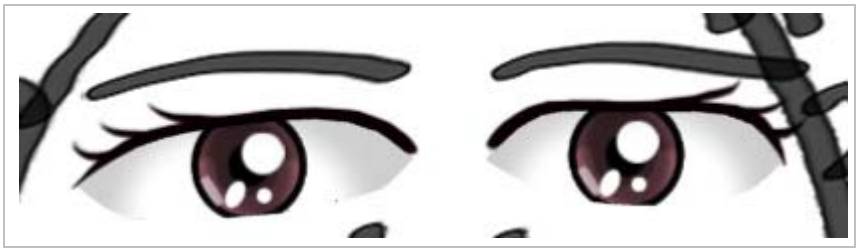
Small Eyelashes	Big Eyelashes
Eye Shadow: Opacity = 10	**Eye Shadow:** Opacity = 100
Eye Shadow: Blur = 20	**Eye Shadow:** Blur = 100

Note:

- Click and keep the **Close Eyes** button pressed to view the **Eyelash** and **Eye Shadow** effect with closed eyes.

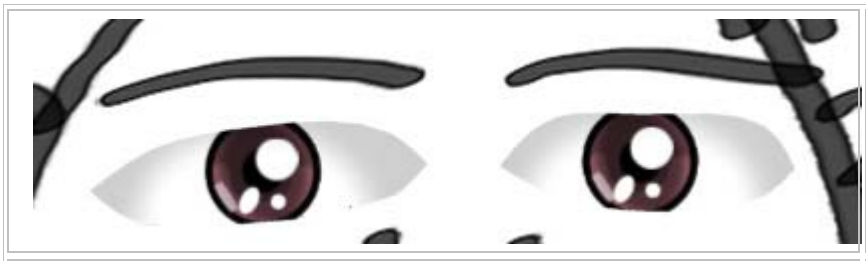
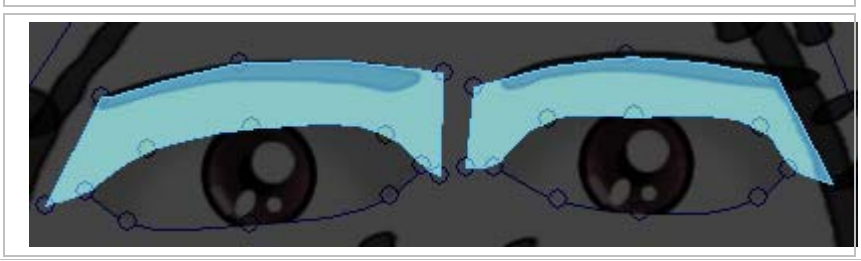
Range of Eyelash

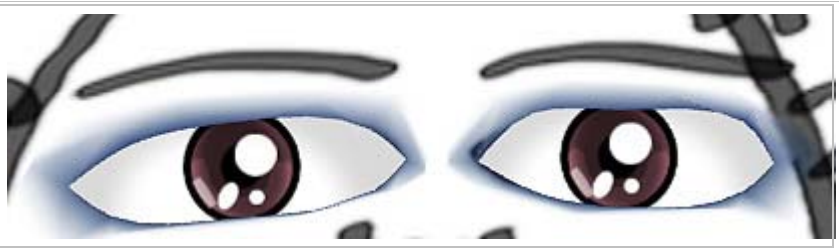
The range of the eyelash is defined by the upper eyelid wires. Please change to Detailed Facial Mode to see the wires.

	Without eyelash
	The eyelash wire (Detailed Facial Mode)
	With eyelash

Area of Eye Shadow

The area of the eye shadow is framed out by the eyebrows, upper eyelids and the end points of the eyes.

	Without eye shadow
	The eye shadow area (Detailed Facial Mode

	With eye shadow (Edge auto-blurred)

Benefits of EyeMagic

Creating Cosmetic Effects

- **Adding Eye Cosmetic and Eyelashes**

  You may apply the **Eyelash** or **Eye Shadow** with/without the virtual eyes applied.

Original image	EyeMagic with Real Eyes
EyeMagic with Virtual Eyes	

- **Changing Eye Shapes**

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

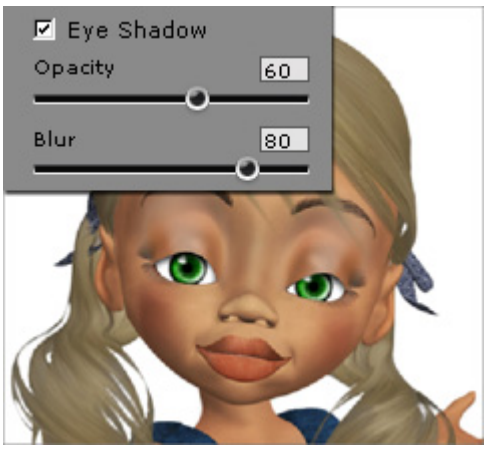
1. Use a model whose wire frame is already properly fitted.

Original image	Eye wires well fitted

2. Change the eye's wires to change the shapes of the eyes. You may see the new eyelids are mapped over the original image.

Change eye shapes	Result

3. Apply the **Eye Shadow** effect to conceal the original image.

	
Eye shadow applied	Eyelash applied

Concealing Image Stretching Issue on Eyelids

When the model's eyes close, you may sometime see an image stretching issue. With the **Eye Shadow** effect, you can cover the stretching image with solid color.

i. The eyelid image stretches as the model blinks without eye shadow.

ii. Apply eye shadow effect to conceal the stretching image.

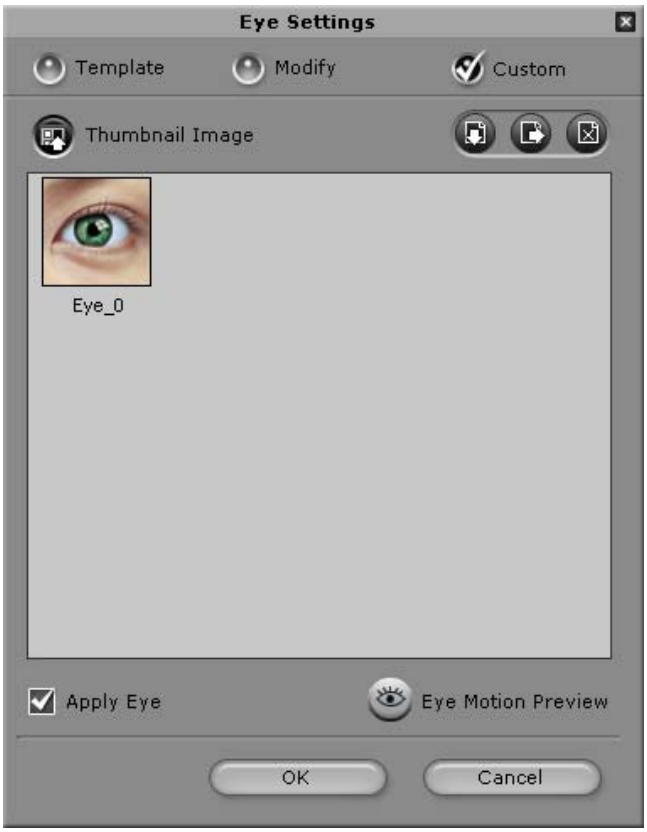
Saving Custom Eye Template

After creating custom eyeballs and all the eye-related settings, you may wish to save it as a custom template for future use. **CrazyTalk** allows you to do just that.

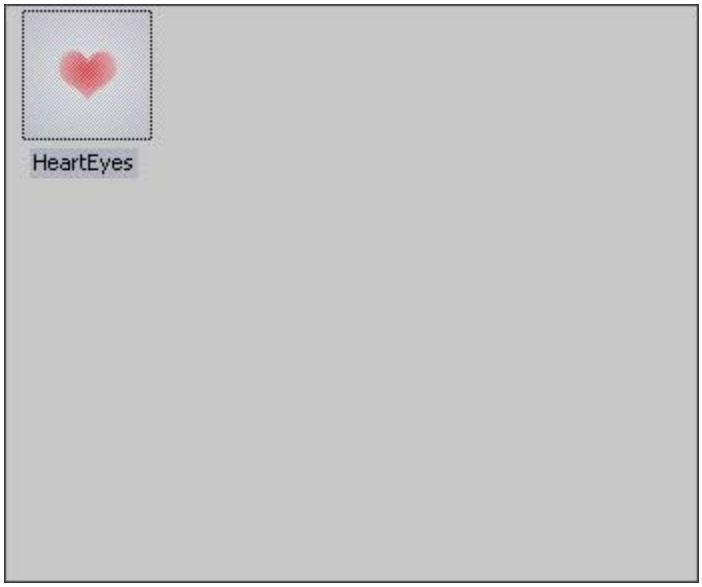
Saving Custom Eye Template

1. Please set all the eye settings.

2. In the **Modify** page, click the **Add to Custom** button.
3. The **Eye Settings** panel switches to the **Custom** page automatically. Your custom eye template is added into the gallery.



4. Click on the name of the template to rename it.
5. Click the **Thumbnail Image** button and load one image as the thumbnail of this template.

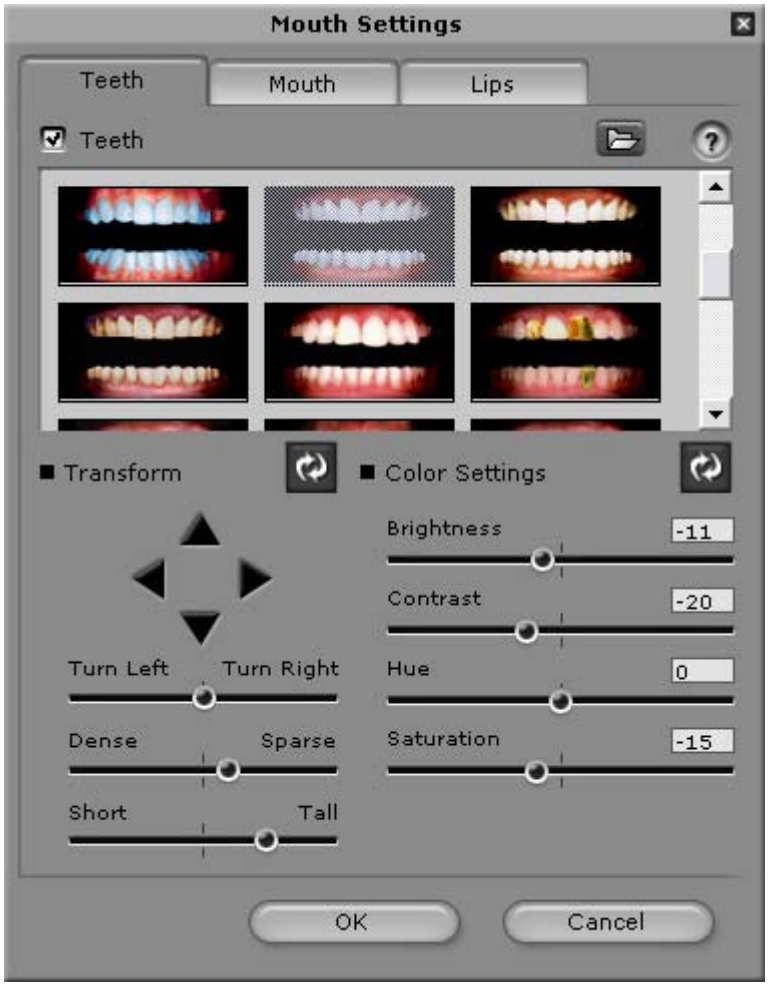


Note:

- The settings and status you adjust in **Eyeball**, **EyeOptics** and **EyeMagic** will be saved altogether.

Teeth Settings

If the original image has no teeth displayed, you can add virtual teeth that are displayed when the mouth is opened. Click the **Teeth** tab in the **Mouth Settings** panel to add virtual teeth and adjust their settings as follows.



- Check the **Teeth** checkbox if you want to add teeth to the mouth.
- If you want to use any of the virtual teeth available from the teeth templates, select a set of teeth from the gallery. The new teeth are immediately displayed in the preview window.
- To set the size of the teeth, use the **Scale** feature. Move the **Dense / Sparse** slider to adjust the width of the teeth. Move the **Short / Tall** slider to adjust the height of the teeth.
- To specify the position of the teeth in the mouth, use the **Transform** feature. Click the ▲/ ▼/ ◀/ ▶arrows to move the teeth. Click the **Resume** button to clear the displacement settings and start adjusting again.
- Use the **Turn Left / Turn Right** slider to rotate the teeth to match the angle

of the mouth.

- 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. Click the **Resume** button to clear the color settings and start adjusting again.
- Click the **OK** button when done.

Note:

- You may also import your custom teeth image as the texture of the virtual teeth.

Creating Custom Teeth

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

Before Importing Custom Teeth Image

1. Click the **Import** button.
2. Locate the texture image for the virtual teeth. (jpg, bmp, tga, png are supported. 256 pixels x 166 pixels recommended)

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

Note:
o If you import an image in 32-bit **BMP/TGA**, the black part in the image will be converted into the alpha channel.

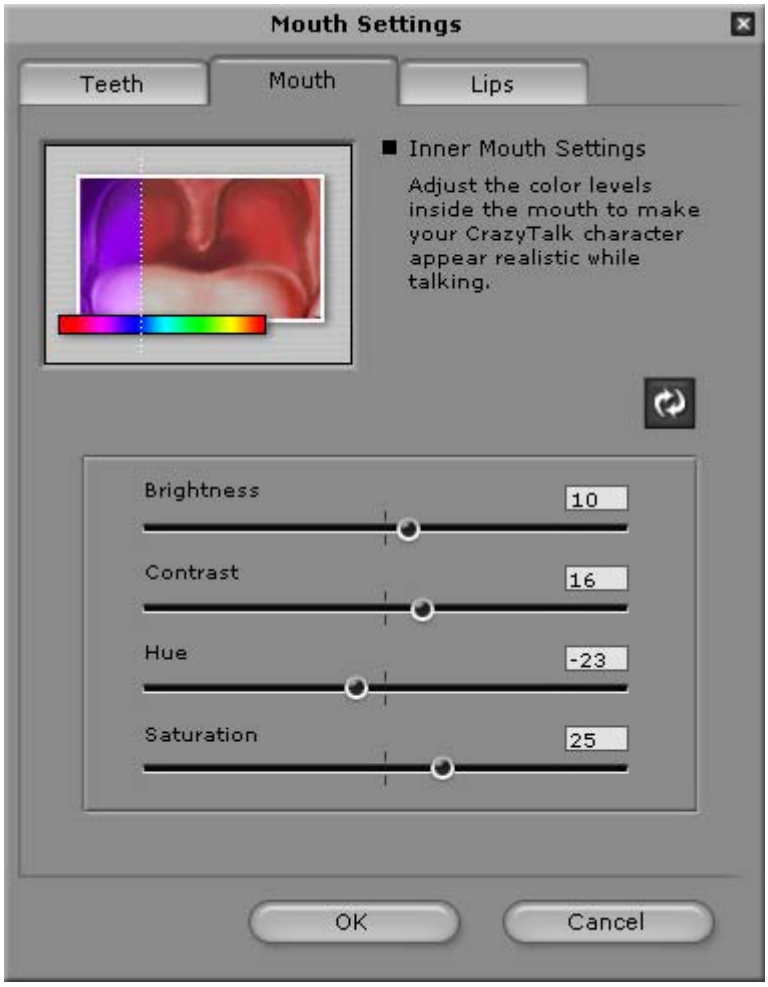
3. Click the **Open** button to apply the selected image file.

After Importing Custom Teeth Image

The part with alpha channel will be transparent
to reveal the color inside of the mouth

Mouth Settings

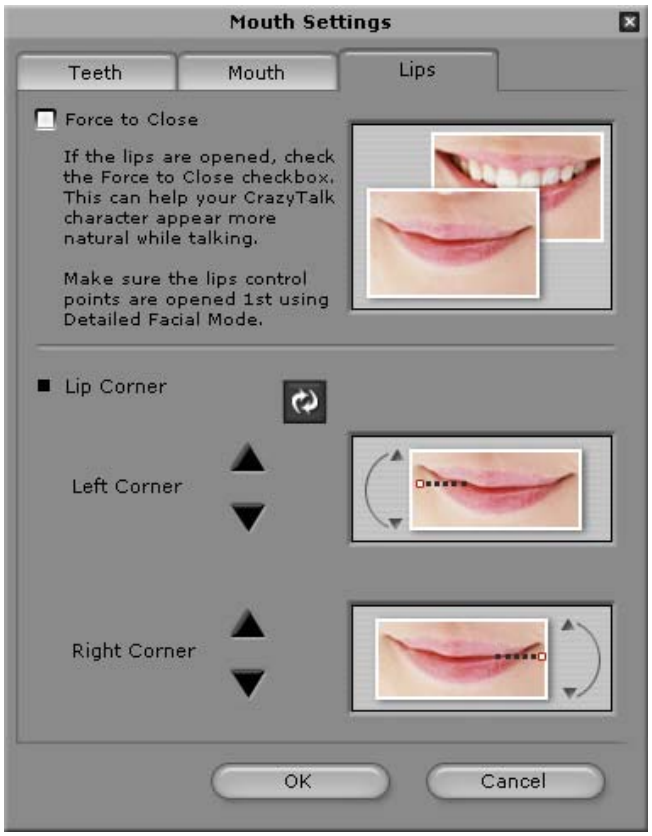
CrazyTalk lets you modify the inner mouth and throat color for animation scripts which require the mouth to be opened wide. Click the **Mouth** tab in the **Mouth Settings** panel to adjust the color levels of the inner mouth:



To adjust the texture and color levels of the inner mouth, move the **Brightness**, **Contrast**, **Hue**, and **Saturation** sliders until you achieve the desired throat color. Alternatively, enter a number directly in the boxes next to the sliders to change the parameter's value. Changes can be seen immediately in the image window. The mouth of your model will be wide open during this operation to allow you to better see the color change. Click the **Resume** button at any time to clear your changes and restart. Click the **OK** button when done.

Lips Settings

CrazyTalk now offers lips setting to make the lip movements as realistic as possible. This setting lets you specify the position of the control points on the lips that are opened first. Click the **Lips** tab in the **Mouth Settings** panel to adjust the lips as follows:



- Check the **Force to Close** checkbox to close the model's lips. This feature is useful when the original image has an open mouth. Make sure that the control points for the open lips are specified correctly while adjusting the wire frame.

Original Image	Force to Close: **ON**

- To set the position of the lips, click the ▲/ ▼arrows next to **Left Corner** or **Right Corner**. Click the **Resume** button to clear your settings and start adjusting again.
- Click the **OK** button when done.

Saving Project Models

CrazyTalk lets you to save models under the Custom part of the image gallery. You can modify a template image or create a talking image from an imported image of your choice, use the fitting and image processing tools to prepare the image for animation, and then save the model image for future use.

To save an image, do one of the following:

- Click the **Add** button to add the model to the custom model gallery. You can rename the image and save it to a desired folder using the tools at the top of the image gallery.
- After you are satisfied with the model and the color, size, and motion attributes, click the **Overwrite** button in the image gallery to save all the changes to the selected model file.
- You can also save the model image as a **JPG** image by clicking the **Save** button.

Note:

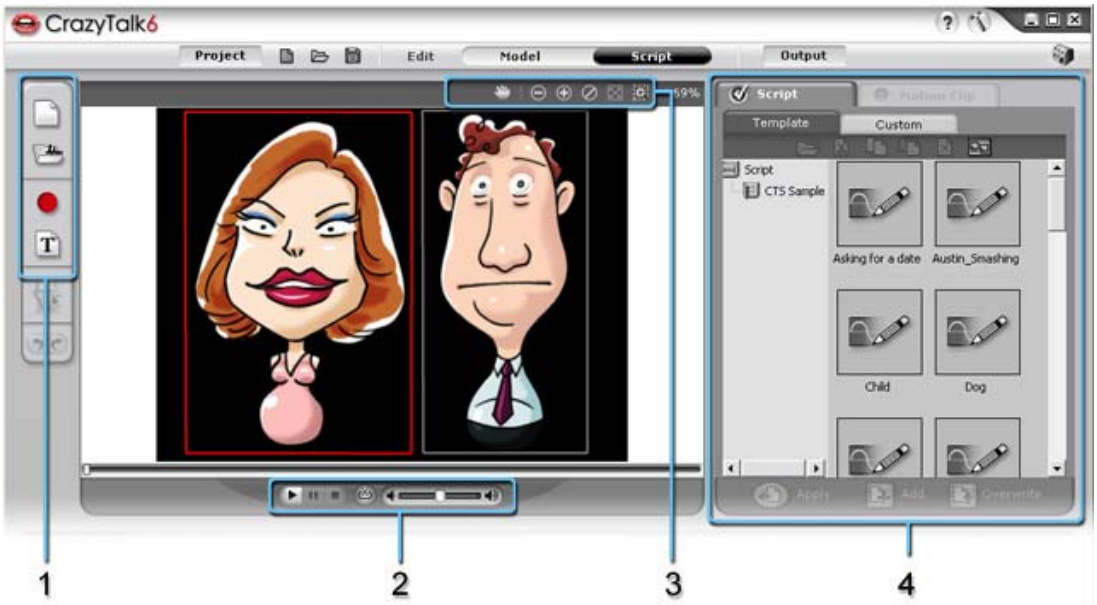
- If you **Add** or **Overwrite** (while holding the **Ctrl** key) and apply one model in the gallery repetitively, the quality of the model will decrease since **CrazyTalk** applies the model and its mask in **BMP** format but saves it in **JPG** format.

CREATING A CRAZYTALK STAGE

Introducing the Stage

After you create one or multiple models on the **Model** page, you may then switch to the **Script** page to generate the story.

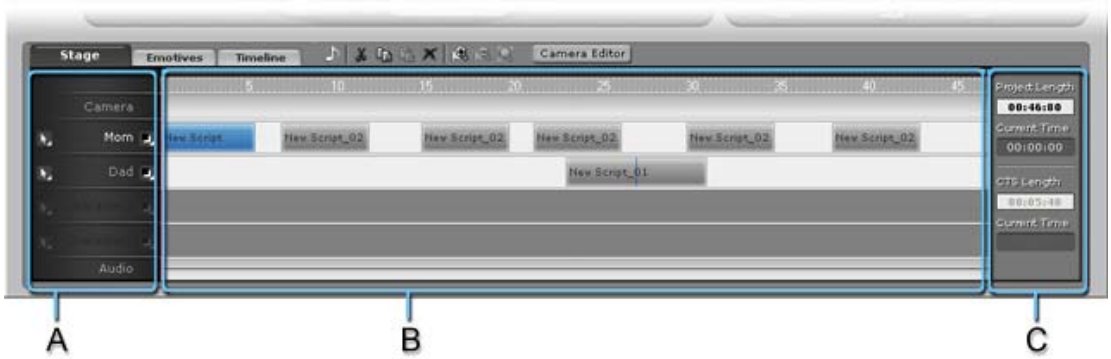
Once the **Script** page displays, you will encounter the **Stage** as shown below:



1. Add Voice Scripts	• : Create an empty script (15 seconds by default). • : Import prepared audio file as new voice script (.wav, .mp3). • : Record sound from microphone to create a voice script. • : Utilize TTS engine to convert text into voice script.
2. Playback Control	• : Playback the project. • : Pause playback. • : Stop playback.

	• : Loop the playback. • : Adjust volume.
3. Viewing Tools	• : Full Screen View - Display image in full screen view. • : Zoom In - Enlarge image to increase clarity. • : Zoom Out - Reduce magnification to increase the area of visibility. • : Hand - Pan across the image. • : Fit to Window - Resize image to fit it in viewing window. • : Original Size - Display image at original size and magnification. • : Drag Zoom - Drag a marquee across the image and enlarge the selected area.
4. Script Gallery	• : Create a new folder. • : Cut the script file. • : Copy the script file. • : Paste the script file. • : Delete the script file. • : Toggle between thumbnail and list mode.

	• : Apply script from the gallery. • : Add selected talking script to custom script gallery. • : Overwrite the selected gallery script file with the currently picked talking script.



A. Object Name List	This panel lists the name of the main camera, the name of the characters and the audio track. You may change the characters' names, change the layers of each character or exchange characters' tracks.
B. Stage Tracks	• **Camera Track:** In this track, you may add camera transform keys to generate camera operating effects. Click the **Camera Editor** Camera Editor button to add camera keys or use the **Auto Zoom** feature. Please refer to Utilizing Camera to Create Close Ups for more information. • **Model Track:** In the model track, you may add voice talking scripts to models (16 talking scripts per character), perform basic editing to the talking script (cut, copy, paste, delete), rename the talking script, and loop the talking script. • **Audio Track:** This track shows the wave graphic of the background music. You may

	drag to select a range and then cut, copy, paste or delete the music within this range. Click the **Background Audio** button to load an audio file as the background music. (.wav, .mp3)
C. Time Display	**Stage Mode Enabled** • **Project Length:** Displays the total length of the project. You may change the project length by typing in a desired time length into the field. The maximum length of the time for a project is 30 minutes. • **Project Current Time:** Displays the time frame where the indicator is currently located. You may type into desired time to have the indicator jump to the time frame specified. **Timeline Mode Enabled** • **CTS Length:** Displays the length of the selected talking script. You may change the talking script length by typing in a desired time length into the field. • **Current Time:** Displays the relative time frame where the indicator is located within the talking script. You may type into desired time to have the indicator jump to the time frame specified.

Basic Concepts of Stage and Scripts

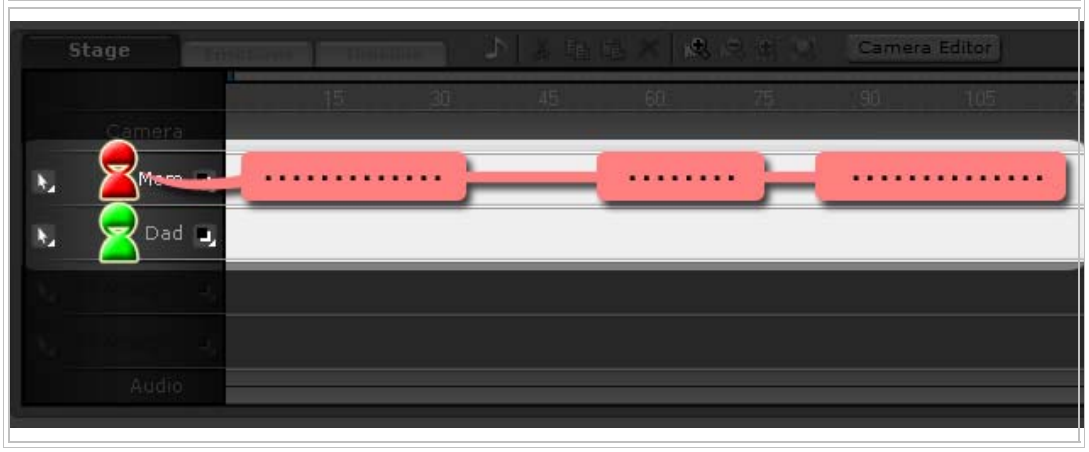
Models and Stage

When you add one or more (up to four) models on the **Model** page, the same number of models will be enabled in the **Stage** panel on the **Script** page.

Model Page	Script Page / Stage Panel
Two models are added. (You may add up to four models)	The models enabled in the stage panel.

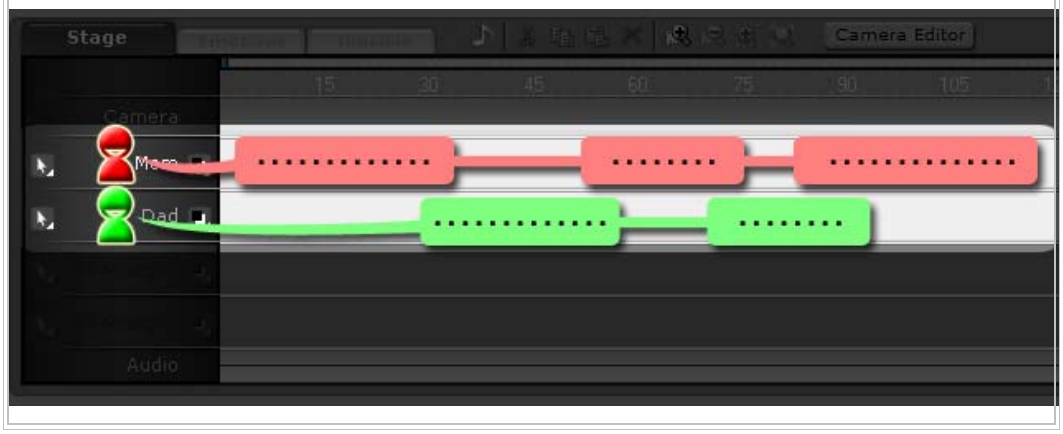
Talking Scripts for Models on Stage

You can then add up to 16 talking scripts for each model in different time frames. Please refer to Inserting Talking Scripts to Models for more information.

Add talking scripts to one of the models


If you wish to generate a conversation, you may then add talking scripts to another model intermittently to another model's talking scripts.

Add talking scripts to another model



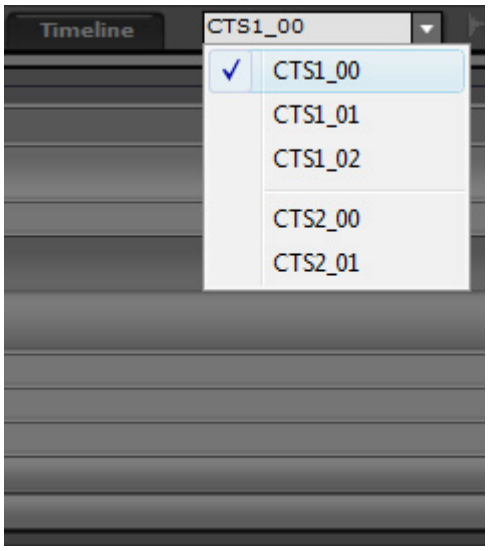
Editing Talking Scripts

The talking scripts can be applied with emotions or be edited individually via the **Emotives** and **Script Timeline** panels.

Select one of the talking scripts for the desired model to enable the tabs of these two panels.

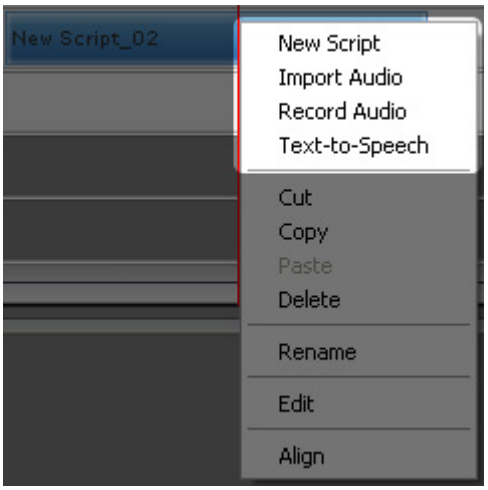
Select talking script to enable Emotive and Timeline tabs for editing

In the **Timeline** panel, all the talking scripts from model tracks enabled are listed in the **Talking Scripts** drop down list. You may then change to another talking script to edit.



Inserting Talking Script to Models

In the **Stage** panel, you may utilize the left-side tool bar to insert talking scripts or right click on the target model's track to insert a talking script.

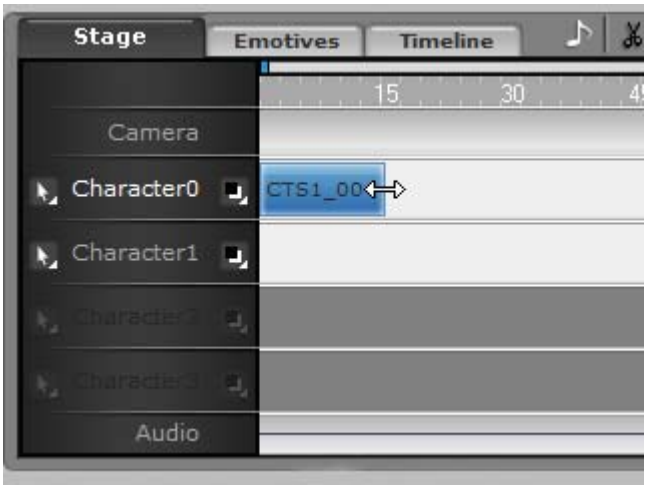
	
Left-Side Tool Bar	**Right-click Menu**

When the talking script is inserted, edit it with the **Script Timeline** or **Loop** it.

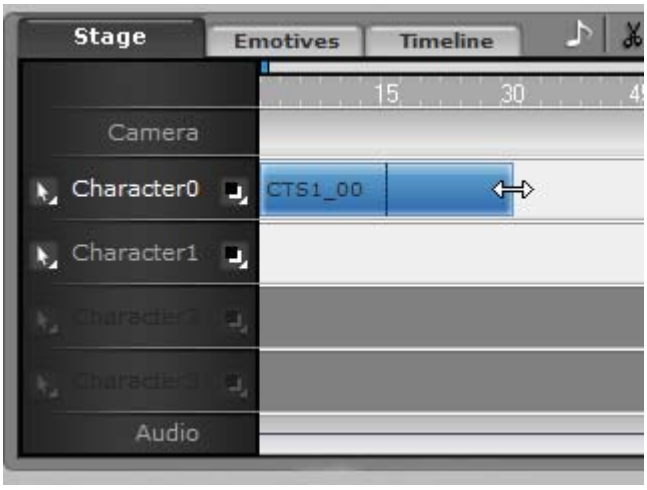
Looping Talking Script

To loop a talking script, please follow the steps below:

1. Move the cursor to the right edge of the talking script.



2. When the cursor changes to a double arrow, click and drag it to the right to loop the clip.



Using Talking Script (CTS)

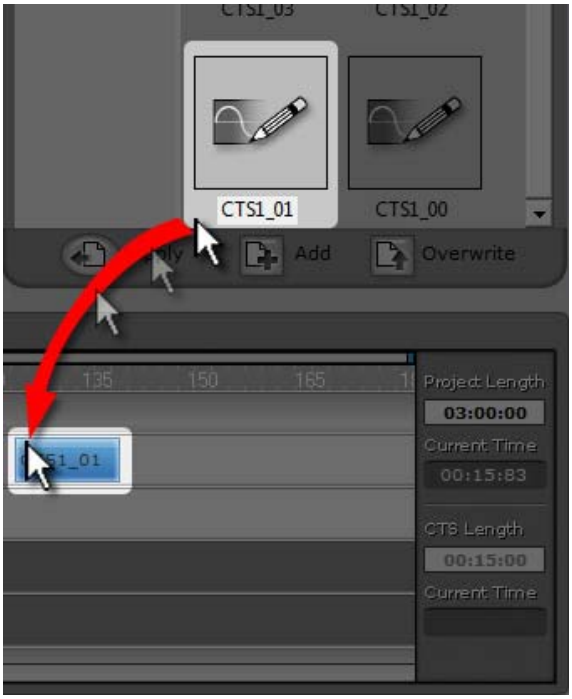
When you wish to insert a talking script into the script track in the **Stage** panel, you may consider using the script (CTS files) in the **Template** or **Custom** gallery installed along with the program.

For Selected Model

- Double-click on the talking script file in the gallery to insert it into the current time on the talking script track of the selected model.
- Select a talking script file in the gallery and click the **Apply** button to insert it into the current time on the talking script track of the selected model.

For All Enabled Models

- Alternatively, you may drag the desired talking script from the gallery onto the stage and drop it on any point of time.



Note:

- If you utilize this method in the Timeline panel, the current talking script will be replaced by the new one.

Using the Sound Recorder

CrazyTalk provides a sound recorder that can record audio from various audio sources. This audio can then be used as the talking message or the script for the models. The sound recorder can record sound from various audio devices such as a microphone, phone line, CD player, audio line in, or any other auxiliary input device connected to your PC.

To record sound, click the **Record Audio** button. The sound recorder menu opens.

Follow these steps to create the audio script:

1. Select the source for recording sound from the **Input Device** drop-down list.
2. Adjust the recording volume using the **Volume** slider.
3. Click the **Record** button to start recording. Recording from the specified input device starts.
4. Click the **Stop** button to stop recording sound.
5. Click the **Play** button to play back the recording.
6. If you are satisfied with the recording, click the **OK** button. If not, press the **Record** button to record again.

Note:

- The maximum length of a recording is 30 minutes.
- If you utilize this method in the Timeline panel, the existing talking script will be replaced by the new one.

Importing WAV/MP3 Files

CrazyTalk provides the useful feature of importing audio files and using them as the script for the model. For instance, if you want your model to sing a song, you can import your favorite song in WAV/MP3 format.

To import WAV/MP3 files, please follow the steps:

1. Click the **Import Audio** button to import a speech file in PCM WAV/MP3 format.
2. Specify the name and location of the WAV/MP3 file using the dialog box.
3. Click the **Open** button to open the file. The file is imported and used as the script.

Note:

- The maximum length of an imported audio file is 30 minutes.
- If you hold the **Ctrl** key while importing a file, it will only replace the data of the current script file. If you just want to change the data instead of creating a new script, use this function to save time from re-editing scripts.
- If you utilize this method in the **Timeline** panel, the current talking script will be replaced by the new one.

Converting Text to Speech

CrazyTalk can also convert text to speech using Microsoft's TTS (Text-to-Speech) engine. You can thus create your own script for the talking model.

CrazyTalk supports SAPI compliant Text-to-Speech engines. We currently use the Microsoft TTS engine as this has 19 voice characters available. If you currently only have the one voice installed (default), other voices are available directly from our site at http://www.reallusion.com/mtts.asp or Microsoft's website.

To convert text to speech, open the TTS dialog box by clicking the **Text-to-Speech** button. The TTS dialog box opens.

Follow the steps to create an audio script:

1. Type the text in the editor window. Alternatively, you can also copy and paste text from your favorite word processing program.
2. Select the type of voice to be used by the model using the **Voice Mode** drop-down list. Various voices of both sexes in different settings as well as a robotic voice are available.
3. Adjust the voice by using the **Volume**, **Pitch**, and **Speed** sliders to achieve the desired effect. You can also enter a number directly in the boxes next to the sliders. You may need to experiment a little with these settings before you get a satisfactory result. Click the **Reset** button at any time to reset the sliders to their default values.
4. Click the **Preview** button to play back the text.
5. Click the **OK** button when done.

Note:

- If you utilize this method in the **Timeline** panel, the current talking script will be replaced by the new one.

The Layers of Models on the Stage

Since **CrazyTalk** supports multiple talking heads, the **Layer** concept is applied to solve the issue when two or more model heads overlap as they are moving. This layer idea includes all the effects that belong to the model as well.

Basically, the model located at a higher position in the **Stage** panel possesses a higher level of layer.

Model Page	Layer Status in Stage Panel
Two models are added. (The female model is added before the male model)	The female model has a higher level than the male model.
Model Transformed	**Model with Special Effects**
The model in the higher level layer covers the one in the lower.	The SFX, as an entity with the model, covers the one in the layer with lower level.

Changing Layer Order of Models

If you wish to change the layer order of the models in the **Stage** panel, it would be tedious to go back to the **Model** page, delete the model at the higher layer and add it back to relocate it to a lower layer. **CrazyTalk** provides you a feature to re-arrange the layer order in a simple way.

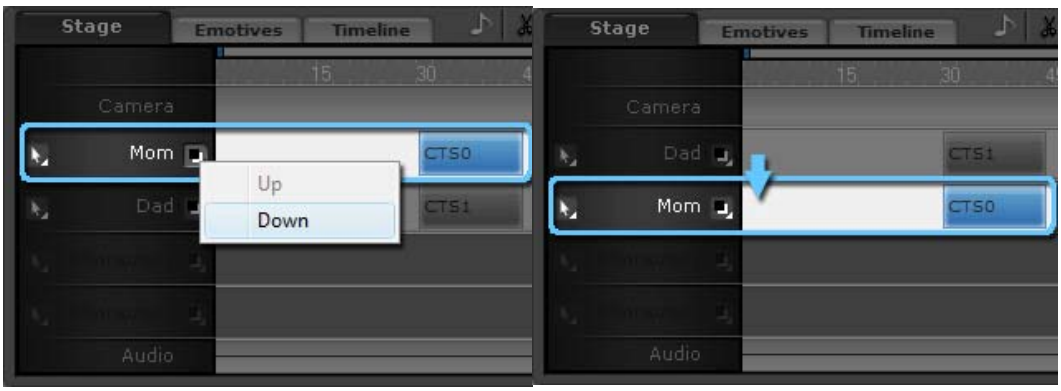
1. Given are two models whose layer orders are described as follows:

Model Page	Layer Status in Stage Panel
Two models are added. (The female model is added before the male model)	The female model has the higher level than the male model.

2. When the models move and overlap with each other, the result is as follows:

Model Transformed	Model with Special Effects

3. Click the button besides the name of the female model and select **Down** in the pop-up menu to move the model down one level with all the talking scripts.



4. The female model with effects will be covered by the male model as a result.

Exchanging Talking Scripts between Models in Stage Editor

CrazyTalk allows you to swap all the talking scripts from one model to another.

1. Given are two models whose layer orders are described as follows:

Model Page	Layer Status in Stage Panel
Two models are added. (The female model is added before the male model)	The female model has a higher level than the male model.

2. When the models move and overlap with each other, the result is as follows:

Model Transformed	Model with Special Effects

3. Click the button besides the name of the female model and select **Swap / Dad** in the pop-up menu to move only the model down one level without the talking scripts. You may optionally modify the layer order for each model.

4. The male model swaps all the talking scripts with the female model as a result.

Utilizing Camera to Create Close-Ups

In **CrazyTalk**, you may create camera movements in the **Stage** panel. The effects can be added by setting keys in the **Camera** track or by utilizing the **Auto Zoom** feature to zoom in on the model or models who are speaking to generate close-ups.

Setting Camera Keys Manually

1. Switch to the **Stage** panel on the Script page.
2. Click the **Camera Editor** button to invoke the panel.

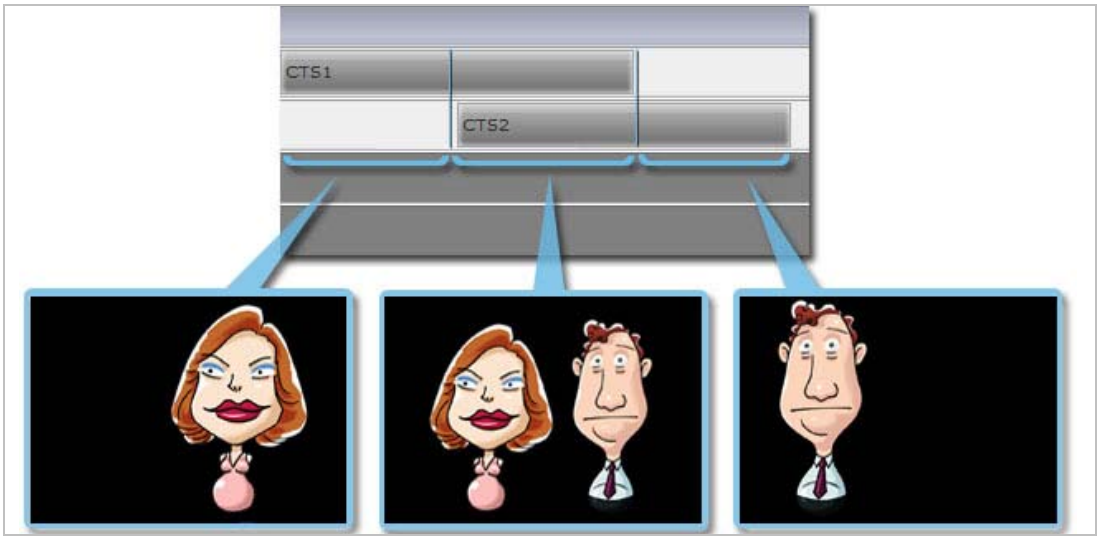
- : Select one or more of the three buttons on the left and drag in the **Interactive Area** to **Pan**, **Zoom** and **Rotate** the camera. Click the right-most button to deselect all tools.
- Click the **Default Key** button to initialize the position and angle of the camera to the origin.
- Click the **Resume** button to abort any adjustments that were made since the **Set Key** button was last clicked.

3. If you are satisfied with the camera effect, click the **Set Key** button to add a new key into the camera track.

4. You may check the **Auto Key** checkbox so each camera move you make will automatically overwrite the data of the current camera key.

Auto Zoom

This feature frees you from having to set camera keys one by one. By checking the **Auto Zoom** box, the camera will automatically zoom in on all the models who are speaking. The theory is described in below illustration:



Zoom to the monologist	Zoom to the two speaking models	Zoom to the other monologist

- **Slow / Fast:** Adjust the slider to decide the camera's transitioning speed between each close-up.
- **Zoom In / Zoom Out:** Adjust the slider to decide how far or close the camera should zoom in on the speaking models.

Note:

- The camera keys are overridden temporarily when the **Auto Zoom** checkbox is checked and you may resume them by unchecking the **Auto Zoom** checkbox.

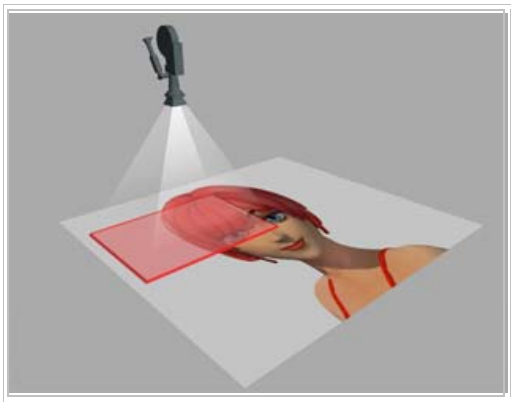
Resuming Key and Setting Default Key for Camera

There are two features in the **Camera Editor** panel, the **Resume** and **Default Key** buttons, which help you a lot when you want to retrieve the status of the camera.

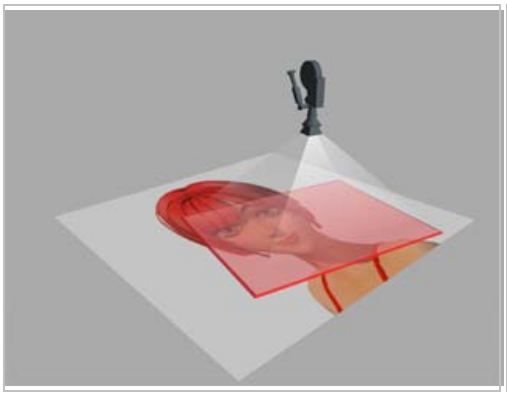
Resuming Key

When you want to discard your current modifications to the camera movements and go back to the last saved status, you may use this method:

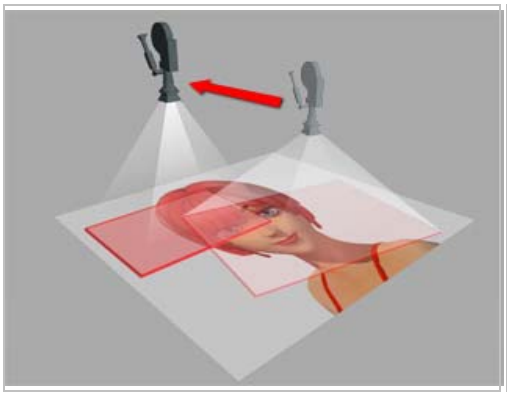
1. Double-click on the desired camera key to invoke the **Camera Editor** panel. Please note that the key in our example already contains offset data.

	
Camera with Transformation Key	Viewport Result

2. Select move, zoom, and/or rotate, then drag in the interactive area to modify the camera position and angle as many times as you want.

	
Camera Transformed	Viewport Result

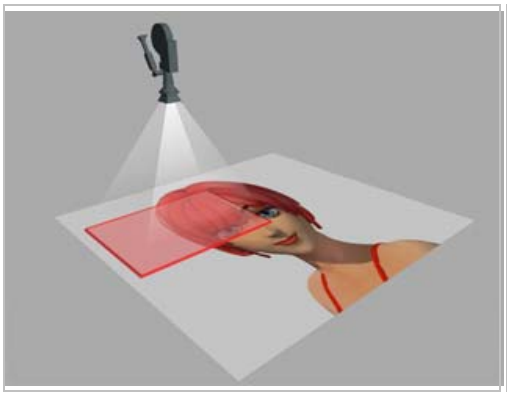
3. Since it is hard to retrieve the original state manually, click the Resume button to abort all modifications.

	
Transform Key Resumed	Viewport Result

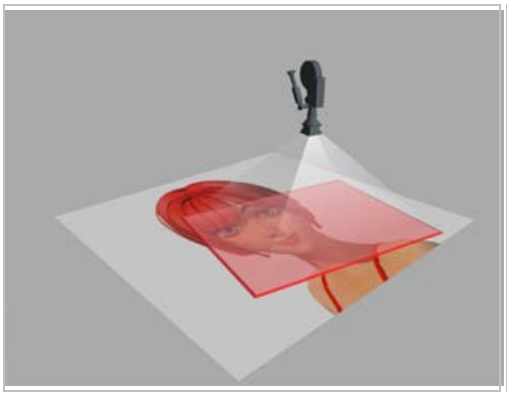
Setting Default Key

Each time you want to remove the transformation key (move, zoom, rotate) and go back to the initial status of the camera, perform the following steps:

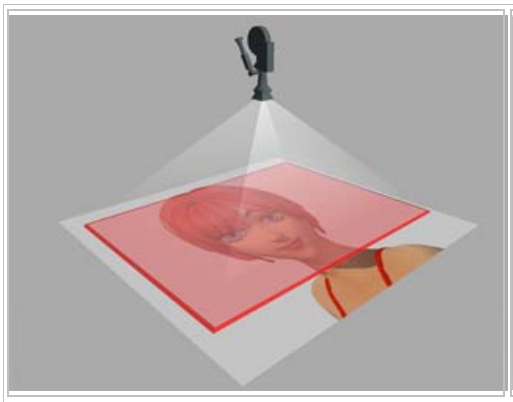
1. Double-click on the desired camera key to invoke the **Camera Editor** panel. Please note that the key in our example already contains offset data.

	
Camera with Transformation Key	Viewport Result

2. Select move, zoom and/or rotate, then drag in the interactive area to modify the camera position and angle as many times as you want. You may even click the **Set Key** button to update the transform data in the key.

	
Camera Transformed (with/without Setting Transformation Key)	Viewport Result

3. Click the **Default Key** button and the offset data will be cleared. The camera goes back to its neutral position and the original key will be replaced by the neutral one.

	
Camera to Default State	Viewport Result

Adding Background Music

In addition to the main audio script for the models, you can also add background music to the whole project.

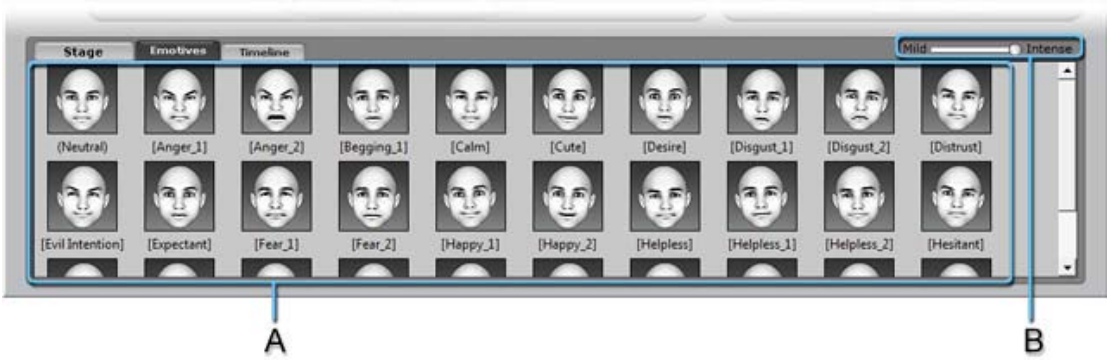
To insert background music, click the **Background Audio** button. The background music dialog box opens.

To insert the background audio, do the following:

1. Click the **Browse** button to import a song or musical track in PCM WAV/MP3 format.
2. Move the **Volume** slider to adjust the volume. You can also enter a number in the box next to the slider to adjust the volume.
3. Check the **Fade In** or **Fade Out** checkboxes to specify if you want the background audio to fade in or out.
4. Click the **Preview** button to play back the background audio.

Introducing the Emotives

Each talking script may be applied with different emotives so the model speaks with different expression in each line. Select one talking script and press the **Emotives** tab in the **Script** page.



A. Emotive Gallery	This panel lists all the accessible expression templates. Double click on desired expression to apply to the talking script.
B. Strength Slider	Drag the slider to decide the strength of the expression.

Choosing an Emotive

The **Emotives** tab in the Script page provides various expression scenarios that are a set of voice and facial expression attributes combined with gestures and muscular movements. You can select a happy, sad, angry, or a cute emotive. You can then fine-tune the mood of the model by adding special expressions or facial movements.

To select an emotive, do the following:

1. Click the **Emotives** tab to view a set of basic emotives such as sad, angry, happy, and more.
2. Select the desired emotive from the gallery and double-click it to apply it to the model.

A set of facial expressions and voice tones are applied to the entire track. They are also accompanied by facial movements and special effects.

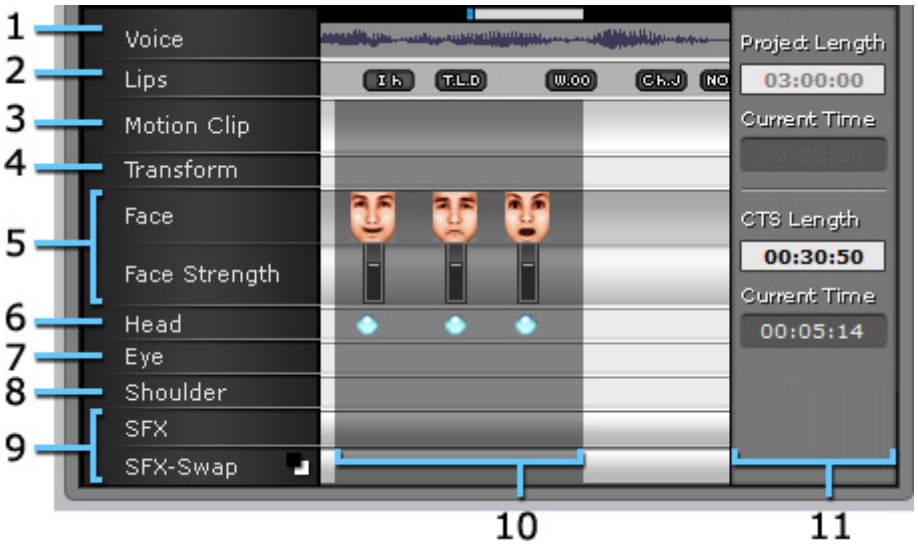
Changing the Expression Intensity

You can adjust the strength of the expression on the model's face by using the **Strength**

slider. Move the slider towards **Intense** for stronger expressions. Move the slider towards **Mild** for expressions with a lower intensity.

Introducing the Script Timeline Panel

The animation script consists of many small parts or sequences. The **Timeline** tab on the Script page allows you to add expressions, gestures, facial movements, and special effects to the complete timeline or to the individual sequences. Thus you can customize the model's face to show specific movements and expressions that match the speech or text of the script.



The complete track or the script sequence is displayed under the **Timeline** tab.

1. Voice	Double-click anywhere in the **Voice** frame to select the complete track.
2. Lip Movements	Double click elsewhere on the track to set the lip keys.
3. Motion Clip	Make a partial selection on this track and group it to create a motion clip consisting of keys in **Face**, **Head/Camera**, **Eyes**, **Shoulders**, and **SFX** tracks. You may also click **Puppeteering** button to record a motion clip.
4. Model Transforms	Double click anywhere on this track to set keys by the **Key Editor**. The keys decide the transform status of the selected model.

5. Facial Expression	Double click anywhere on the track to set facial expression keys, specify the strength, and modify the facial features and muscles.
6. Head Movements	Double click anywhere on these tracks to set keys by the **Key Editor**.
7. Eye Movements	
8. Shoulder Movements	
9. Special Effects	Double click anywhere on the track to add or modify the special effects.
10. Partial Sequence	Click and drag across the **Voice** track to select a partial sequence. The preview window displays which part of the script you have selected.
11. Time Display	Click anywhere on the timeline or move the cursor to see the time display at that point. The time display displays the following times: o Project Length: Displays the length of the project. o Current Time: Display the time frame the indicator locates. o CTS Length: Length of selected talking script. o Current Time: The relative current time frame the indicator locates.

Saving a Script

Saving a script allows you to keep all the settings and the status of the timeline. You may retrieve them to have another model perform the same script.

1. Add data into the **Voice** track.
2. Set keys to each track respectively.
3. Click the **Add** button to save the script into the custom script gallery.

Note:
o If you click the **Add** button while holding the **Shift** key, **CrazyTalk** saves the **SFX** images of each frame in **BMP** format, which can accelerate the saving speed but increase the size of the project.

Editing the Talking Script with Timeline: Using the Timeline Viewing Tools

You may display or hide tracks to have a better view for editing.

1. Click the button to open the menu. Alternatively, you may right click on any one of the timeline's track titles to show the menu.

2. Select a pre-defined mode for displaying: **Simple**, **General**, or **Advanced**.
   - Simple Mode: Display **Voice** and **Motion Clip** tracks only.
   - General Mode: Display **Voice**, **Motion Clip**, **Face**, **Transform**, **Eyes**, and front **SFX** tracks.
   - Advanced Mode: Display all tracks.
3. Alternatively, you may check the tracks in the list to customize the appearance of your timeline.

You can view the complete script or enlarge portions of the timeline using the viewing tools as follows:

- Click the **Zoom In** button to zoom in and view smaller parts of the script in more detail. This is useful if you want to use a wide range of facial expressions for different words of the script.

- Click the **Zoom Out** button to zoom out and view a larger portion of the script.

- Click the **Zoom Out Full** button to zoom out and view the complete script in the sequence window.

- Click the **Zoom to Selection** button to zoom in on the selected area of the timeline.

Editing the Talking Script with Timeline: Using the Timeline Editing Tools

CrazyTalk provides basic editing tools to cut, copy, paste or delete portions of the timeline. To select a part of the timeline, drag across the track to select it. You can edit the speech as well as the facial movements and expressions using these tools as follows:

- **Cut** **:** Cut selected track.
- **Copy** **:** Copy selected track.
- **Paste** **:** Paste selected track at the cursor location.
- **Delete** **:** Delete selected track.

Editing the Talking Script with Timeline: Applying and Creating Voice Effects

The voice for the animated model depends on the audio source for the script. If you create the script by importing a WAV file or by recording using the sound recorder, the model's voice is the voice from the original audio source. If you use the text-to-speech converter to create a script from plain text, you can choose a synthetic voice for the model. However, you can also apply artificial voice effects to the voice for an additional effect.

Note:

You can download additional text-to-speech converter from Microsoft, or browse to Reallusion website for more information.

Applying Voice Effects from Templates

1. Right click anywhere on the **Voice** track and select **Property** from the sub menu. You can also select part of the timeline to apply the voice effect to that section only.

2. Select the **Template** radio button to select a voice effect from **CrazyTalk**'s templates.

3. Select a voice effect such as genie, monster, or robot from the template gallery.

4. Click the **Preview** button to play the script and preview the voice effect.

5. Click the **OK** button when done.

The voice effect is applied to the complete speech or voice track.

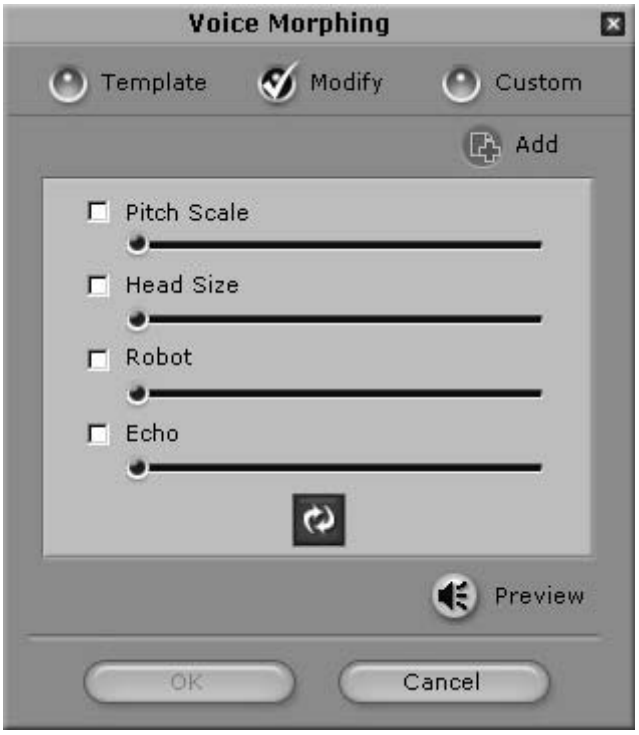
Creating Custom Voice Effects

1. Right-click anywhere on the **Voice** track to create custom voice effects as follows. You can also select part of the timeline to apply the voice effect to that section only.

2. Optionally select a voice effect such as genie, monster, or robot from the template gallery first.

3. Click the **Preview** button to play the script and preview the voice effect.

4. Select the **Modify** radio button to modify the template and create your own.



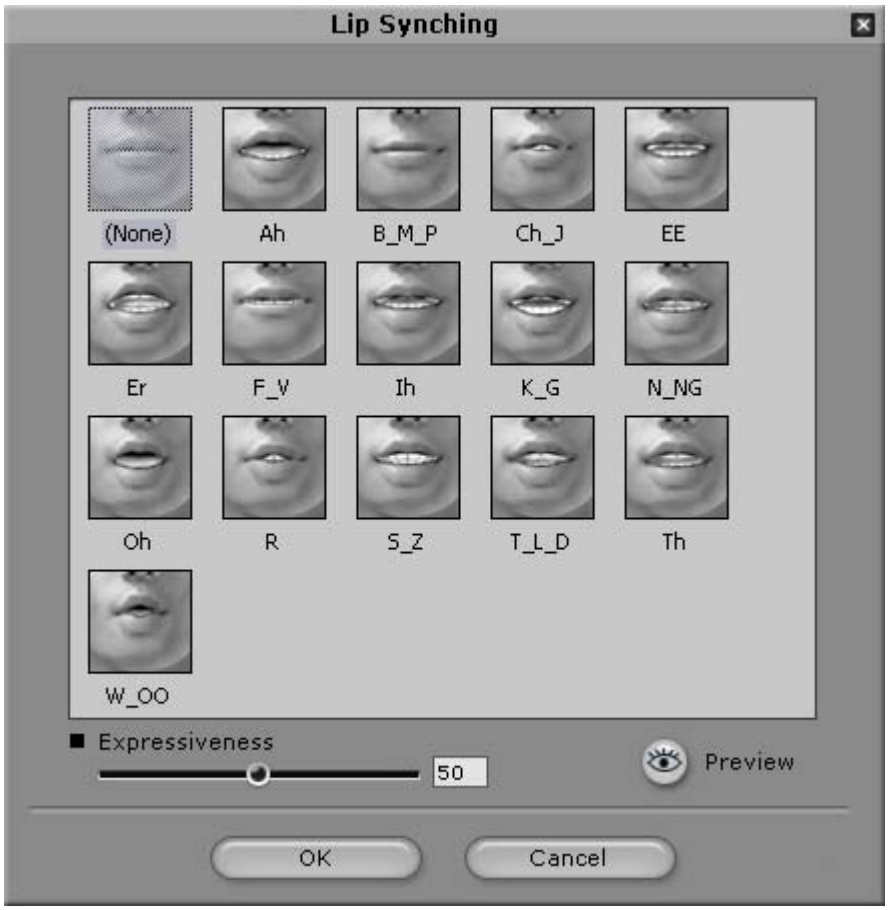
- Check the **Pitch Scale** checkbox and move the corresponding slider to specify the pitch of the voice.
- Check the **Head Size** checkbox and move the corresponding slider to make the voice sound more deep-throated.
- Check the **Robot** checkbox and move the corresponding slider to add a robotic voice effect.
- Check the **Echo** checkbox and move the corresponding slider to add an echo effect.
- Click the **Resume** button to clear all settings and restart.

5. After modifying a template voice effect, you need to add the effect to the custom template. Click the **Add** button to add the voice effect to the custom gallery.
6. Select the **Custom** radio button to select a custom voice effect.
7. Select a custom voice effect from the custom gallery. Click the **Delete** button if you want to delete any of the custom expressions.
8. Click the **OK** button when done.

Editing the Talking Script with Timeline: Lip-synchronizing

CrazyTalk provides special lip synchronization tools to make sure that the lip movements exactly match the words being spoken by the animated model. 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 unit of sound in spoken language. Using visemes, **CrazyTalk** provides perfect lip synchronization which you can adjust for different sounds as required.

Double-click anywhere on the **Lips** track to synchronize the lip movements as follows. You can also select part of the timeline to apply the lip synchronization to that section only.



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 or enter a number in the corresponding box to specify the intensity.

3. Click the **Preview** button to play the script and preview the lip movements to make sure they are synchronized correctly.

4. Click the **OK** button when done.

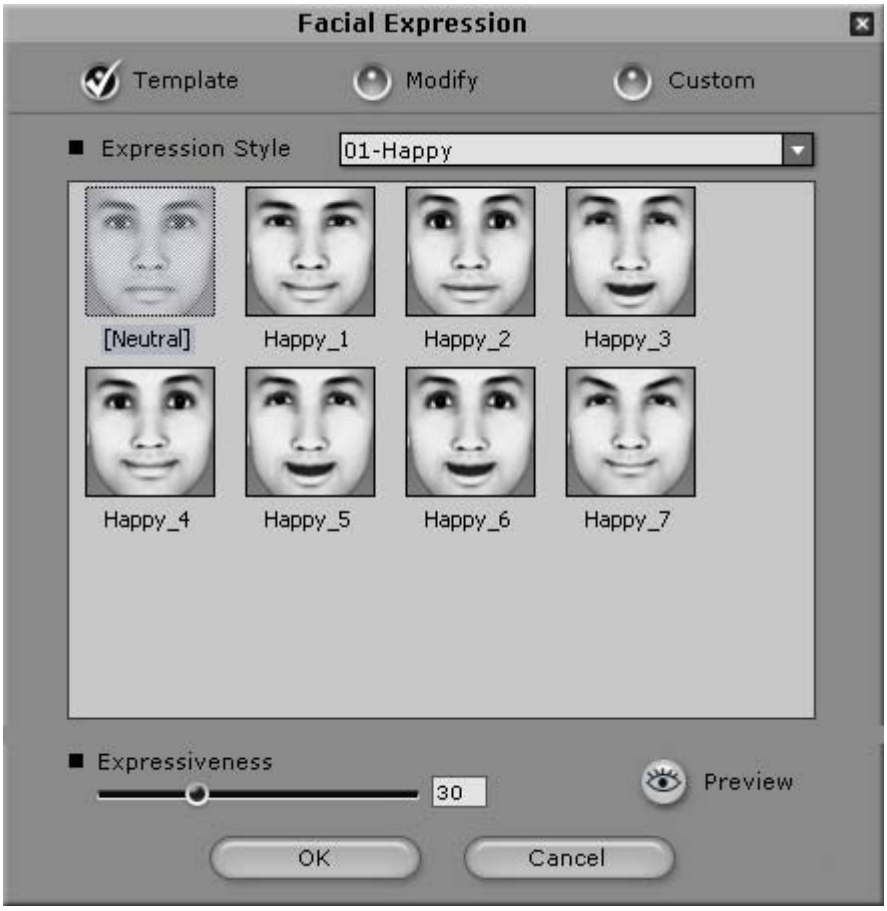
The lip synchronization effect is applied to only a small section of the script and indicated on the track by a grey box. Move the box to other parts of the script as desired or use the editing tools to duplicate the lip movements.

Editing the Talking Script with Timeline: Applying and Creating Facial Expressions

You can apply a basic expression profile or emotive to the animated model that is a set of facial expressions and movements. In addition, you can also apply stronger facial expressions for parts of the script that need more emphasis. The **Face** track lets you apply additional facial expressions.

Applying Facial Expressions from Templates

1. Double-click anywhere on the **Face** track. You can also select part of the timeline to apply the facial expression to that section.



2. Select the **Template** radio button to select a facial expression from CrazyTalk's templates.

3. Select the type of expression from the **Expression Style** drop-down list. A set of expressions for each style such as happy, sad, angry and more is displayed.

4. Select a facial expression from the desired style to see how it looks on the model.

5. Move the **Expressiveness** slider or enter a number in the corresponding box to specify the intensity.

6. Click the **Preview** button to play a small part of the script and preview the expression.

7. Click the **OK** button when done.

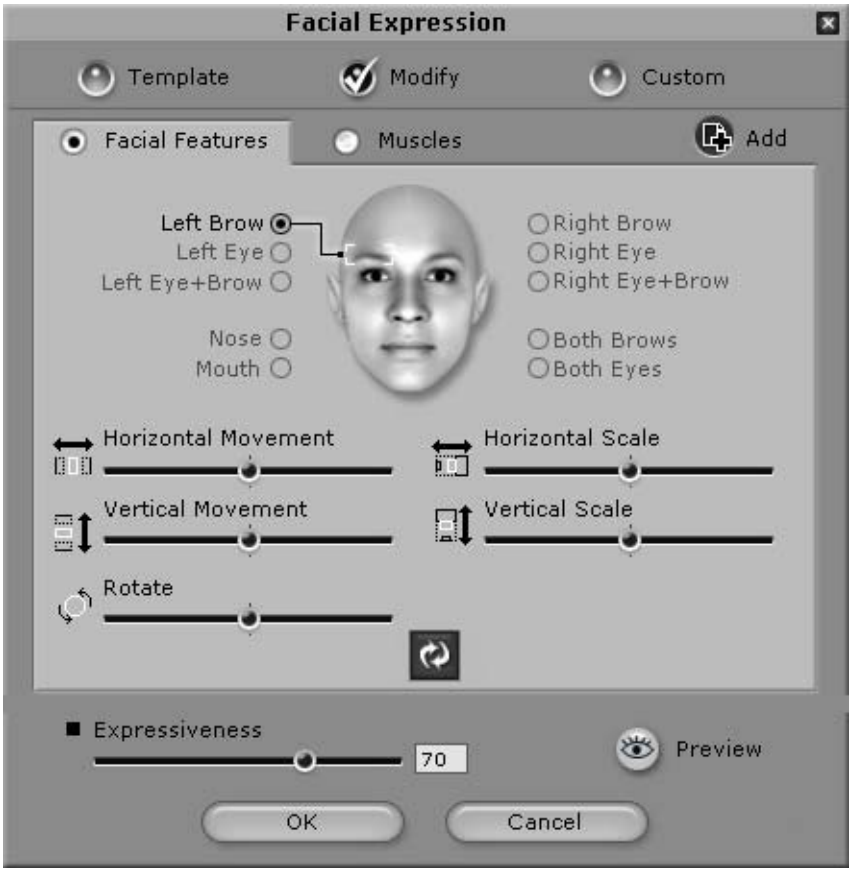
The facial expression is applied to only a small section of the script and indicated by a small face iconon the track. The intensity of the expression is indicated by a slider below the face icon. Move the slider in the vertical direction to adjust the intensity of the expression. Move the face icon to other parts of the script as desired or use the editing tools to duplicate the facial expressions.

Creating Custom Expressions

1. Double-click anywhere on the **Face** track.

2. Select the **Modify** radio button to modify the template and create your own.

3. Select the **Facial Features** tab to modify the facial features as follows:



- Choose the facial feature you want to modify by selecting from one of the following options: **Left/Right Brow**, **Left/Right Eye**, **Left/Right Eye+Brow**, **Nose**, **Mouth**, **Both Brows**, or **Both Eyes**.
- Move the **Horizontal Movement** slider to specify how much the feature moves in the horizontal direction.
- Move the **Vertical Movement** slider to specify how much the feature moves in the vertical direction.
- Move the **Horizontal Scale** slider to specify how much the feature expands in the horizontal direction.
- Move the **Vertical Scale** slider to specify how much the feature expands in the vertical direction.
- Move the **Rotate** slider to specify how much the feature rotates.
- Click the **Resume** button to clear all settings and restart.

4. Select the **Muscles** tab to add muscle movements as follows:

- The **Muscles** tab features a wide range of facial muscular movements such as blinking, raising brows, wrinkling the nose, winking, and others. You can apply as many movements as you want.
- Move the sliders corresponding to the required muscle movement to adjust the intensity of the movement.
- Click **Resume** to clear all settings and restart.

5. Click the **Add** button to add the expression to the custom gallery.
6. Select the **Custom** radio button to choose a custom expression.
7. Select a custom expression from the custom gallery. Click the **Delete** button if you want to delete any of the custom expressions.
8. Click the **OK** button when done.

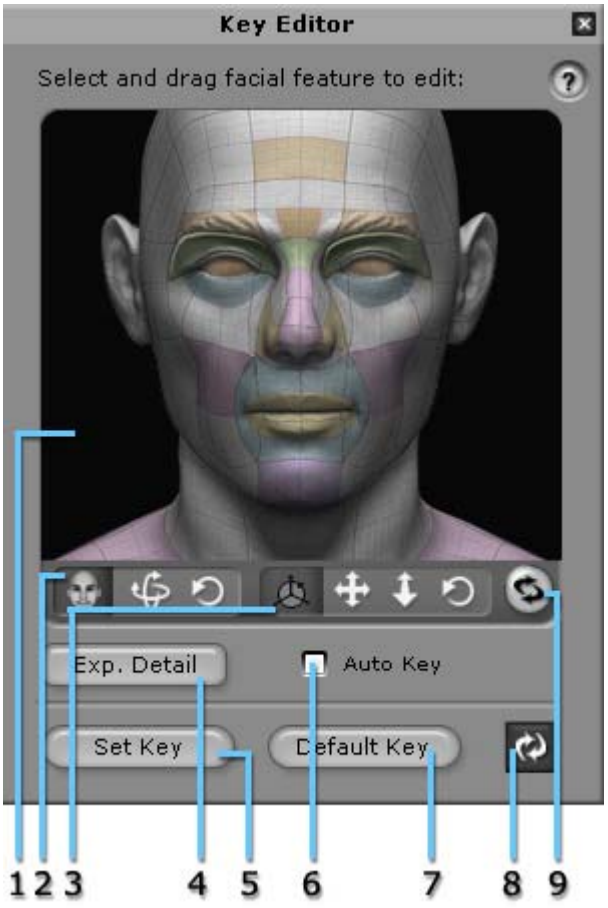
Using Key Editor: Introducing the Key Editor

Invoking Key Editor

The Key editor facilitates setting or modifying keys in the **Transform**, **Face**, **Head**, **Eyes** or **Shoulders** tracks by using a more intuitive and interactive interface. To invoke the **Key Editor**, you may:

- Click the **Key Editor**

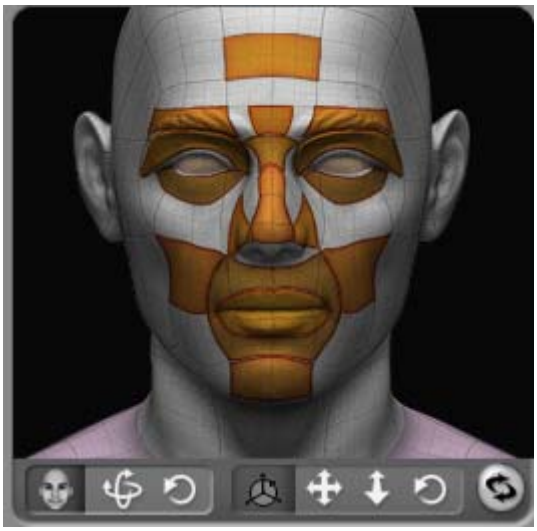
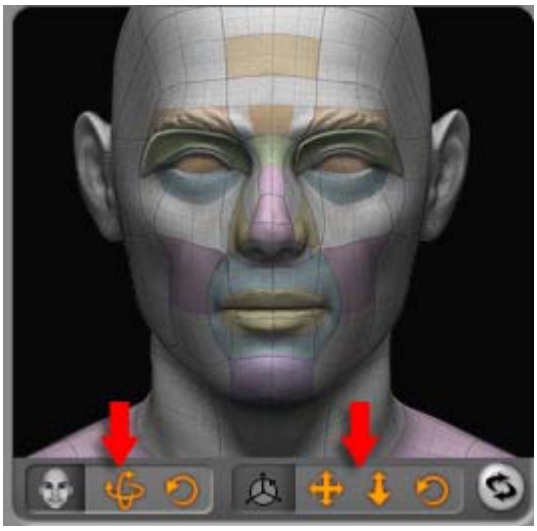
button.
- Double-click on the desired key in the **Transform**, **Head**, **Eyes** or **Shoulders** tracks to edit the existing key.
- Double-click anywhere in the **Transform**, **Head**, **Eyes** or **Shoulders** tracks to initiate a new key.

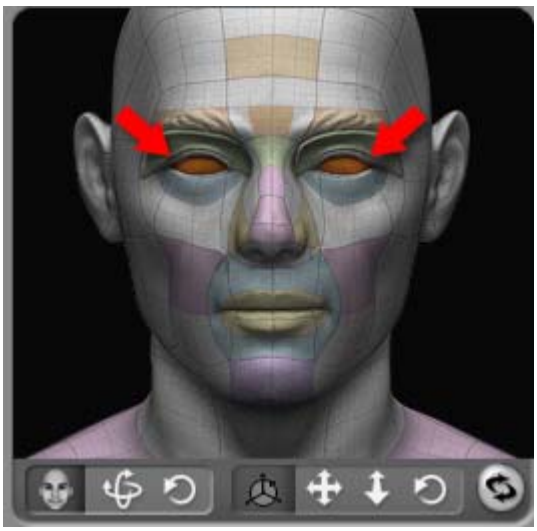
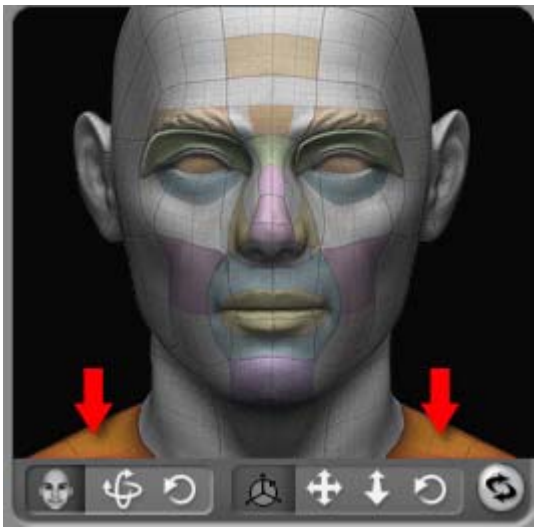


1. Solo Feature Selection	Select to highlight the desired features to convert the changes into keys.
2. Add/Modify Head Key	Select to rotate / tilt the head.
3. Add/Modify Transform Key	Select to move the model around.
4. Expression Detail	Click to manually change the muscle movement strength on the face.
5. Set Key	Click to add a new key or apply the changes to an existing key.
6. Auto Key	Check this checkbox to automatically add or modify a key everytime you make a change.
7. Default Key	Click to set a key that neutralizes all adjustments.
8. Resume	Click to return to the last state before clicking the **Set Key** button.
9. Clear Selection	Deselect all features.

Using Key Editor: Solo Features and Corresponding Tracks

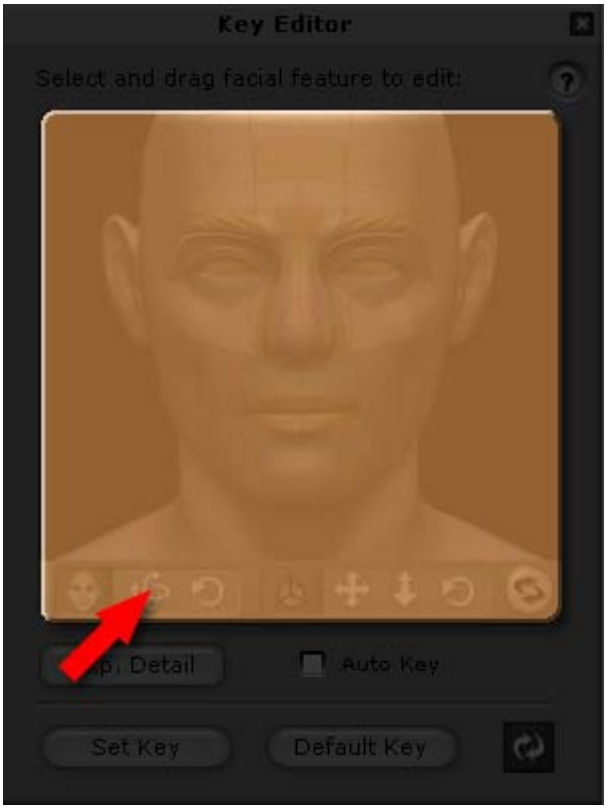
When you pick features in the **Solo Feature Selection** pane, you indicate **CrazyTalk** to add keys to the corresponding tracks.

Selected features	Corresponding tracks
	Face Track
	Head/Transform Track

	Eyes Track
	Shoulders Track

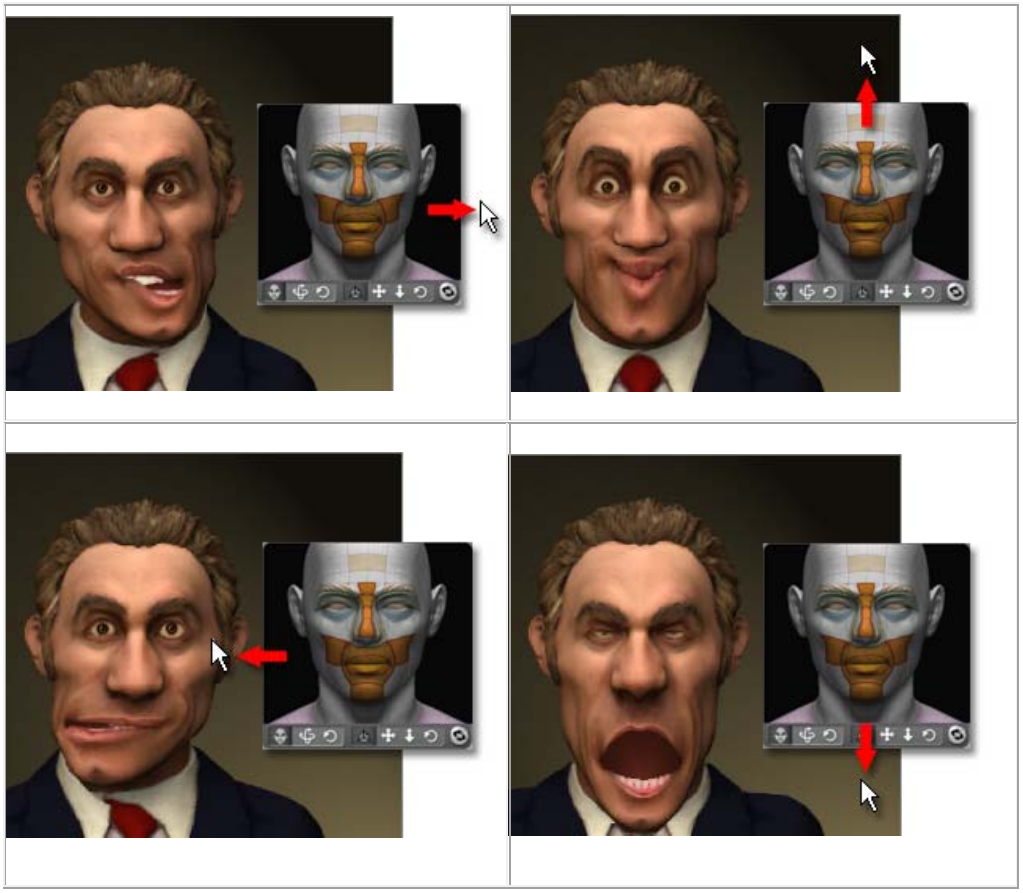
Using Key Editor: Setting the Facial Keys

1. Select the desired facial features for setting keys in the pane.
2. If you are using the mouse as your input device, please press and hold the left mouse button inside the interactive area.



The Interactive Area

3. Drag the mouse outside the interactive area to make the changes.



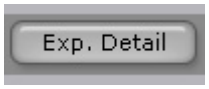
4. Click the **Set Key**

button.

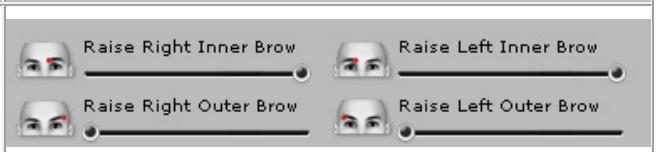
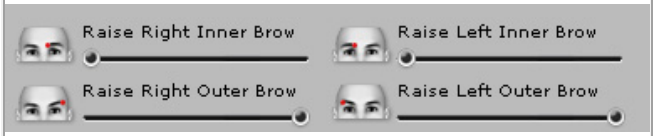
Note:

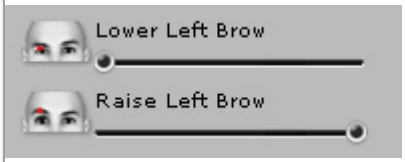
- Check the **Auto Key** checkbox so you will not need to click the **Set Key** button repeatedly. The **Key Editor** will automatically convert the movement of your input device into keys.

Using Key Editor: Facial Features and Expression Details

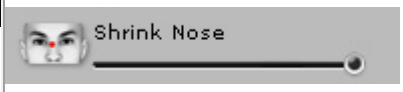
When you move the facial features in the **Facial Features** pane, you are editing the corresponding expression details of the features. You may click the **Exp. Detail** 

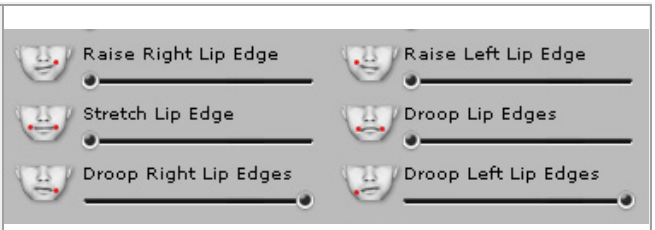
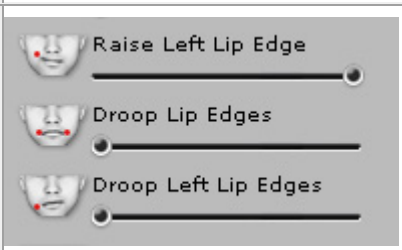
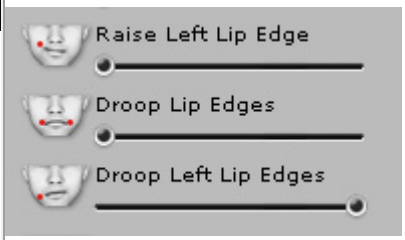
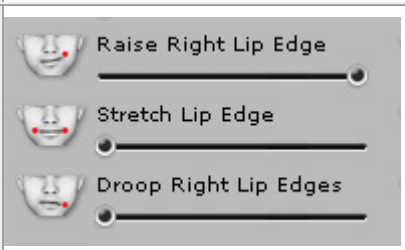
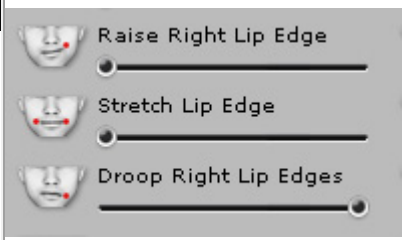
button to check the values in the **Expression Detail** dialog.

Selected features	Mapping Results by Mouse Movements
	 Mouse Moves Up  Mouse Moves Down
	 Mouse Moves Up Mouse Moves Down Mouse Moves Left

	 Mouse Moves Right
	 Mouse Moves Up Mouse Moves Down
	 Mouse Moves Up Mouse Moves Down
	 Move Mouse Up

	 Move Mouse Down
	 Mouse Moves Up Mouse Moves Down
	 Mouse Moves Up Mouse Moves Down
	 Mouse Moves Up Mouse Moves Down
	 Mouse Moves Up Mouse Moves Down

	Mouse Moves Up  Mouse Moves Down
	Mouse Moves Up Mouse Moves Down
	Mouse Moves Up Mouse Moves Down
	Mouse Moves Up

	 Mouse Moves Down
	 Mouse Moves Up  Mouse Moves Down
	 Mouse Moves Up  Mouse Moves Down

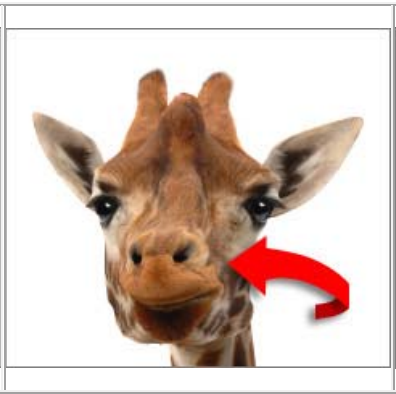
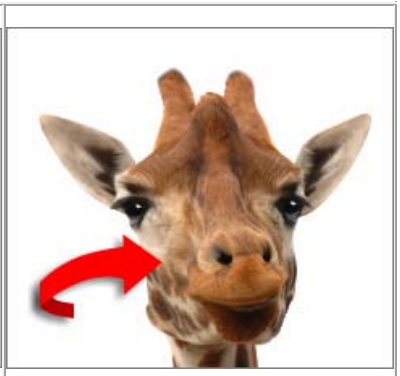
	 Mouse Moves Up Mouse Moves Down Mouse Moves Left Mouse Moves Right
	 Mouse Moves Down Mouse Moves Left Mouse Moves Right

Using Key Editor: Setting the Head Keys

Using the **Key Editor**, you can also set or modify the rotation/tilt keys for the character.

Including the Rotation Status into a Key

1. Select the **Head Rotation** button in the pane.
2. If you are using the mouse as your input device, please press and hold the left mouse button inside the facial feature pane.
3. Move the mouse around, the model will rotate its head to match the mouse movement.

		
Initial View	**Mouse Moves Left**	**Mouse Moves Right**

4. Click the **Set Key**

button to save the changes into the key.

Including the Tilt Status into a Key

1. Select the **Head Tilting** button in the pane.
2. If you are using the mouse as your input device, please press and hold the left mouse button inside the facial feature pane.
3. Move the mouse left and right to tilt the model's head accordingly.

Initial View	**Mouse moves left**	**Mouse moves right**

4. Click the **Set Key**

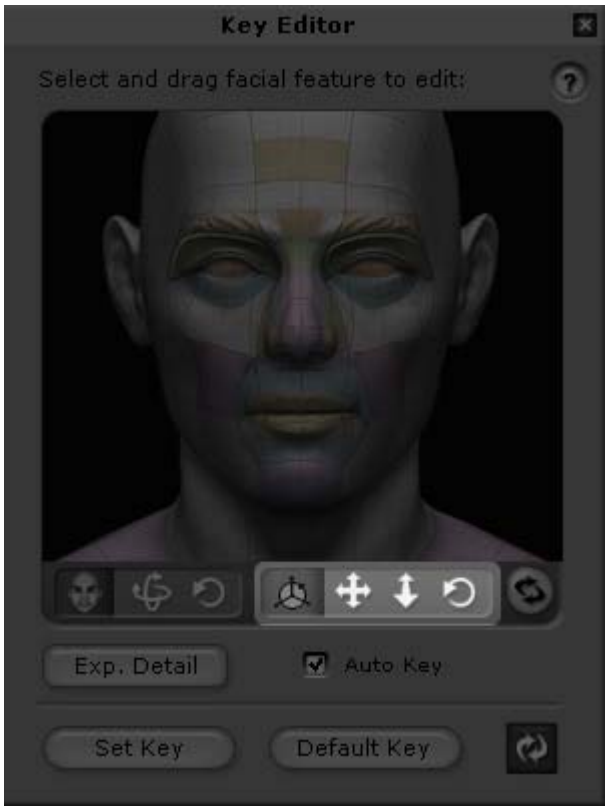
button to save the changes into the key.

Note:

- Check the **Auto Key** box so that you won't need to click the **Set Key** button repeatedly. The **Key Editor** will automatically convert the movement of your input device into keys.

Using Key Editor: Setting the Transform Keys

Using the **Key Editor**, you can also set or modify the Move/Scale/Rotation keys for the models.



Including the Move Data into a Key

1. Select the tool in the pane.
2. Drag inside the interactive area or click inside the interactive area and drag outward the panel.

3. The model then moves along with the movement of your mouse.

Initial View	**Moves Up**	**Moves Down**
Moves Left	**Moves Right**	

4. Click the **Set Key**

button to include the changes into the key.

Including the Scale Data into a Key

1. Select the tool in the pane.
2. Drag inside the interactive area.
3. Scale the model up or down by moving your mouse up or down.

Initial View	**Moves Up**	**Moves Down**

4. Click the **Set Key** button to include the changes into the key.

Including the Rotate Data into a Key

1. Select the tool in the pane.
2. Drag inside the interactive area.
3. Move the mouse left to rotate the model counter clock wise and move the mouse right to rotate the model clock wise.

Initial View	**Moves Left**	**Moves Right**

4. Click the **Set Key** button to include the changes into the key.

Note:

- Check the **Auto Key** checkbox so that you don't need to click the **Set Key** button repetitively. The **Key Editor** automatically includes the status of each feature for each mouse movement.

Using Key Editor: Model Movements and the Background

You may utilize the **Transform** feature to move the models in the project.

1. In the **Model** page, click Background Mask Editing and specify the background area.

2. Click the Background Settings button.

3. Select the **Import** option and pick an image as the background.

4. Back to the **Script** page, in the **Key Editor**, select the **Transform** features you want to adjust and press the **Preview** button.

5. Move your models to view the result.

Move	**Scale**	**Rotate**

Using Key Editor: Aligning Model Position

The **Aligning Model Position** feature facilitates offsetting the model's location between two talking scripts, so you do not have to repetitively move and check the model's position in order to align it to the second talking script.

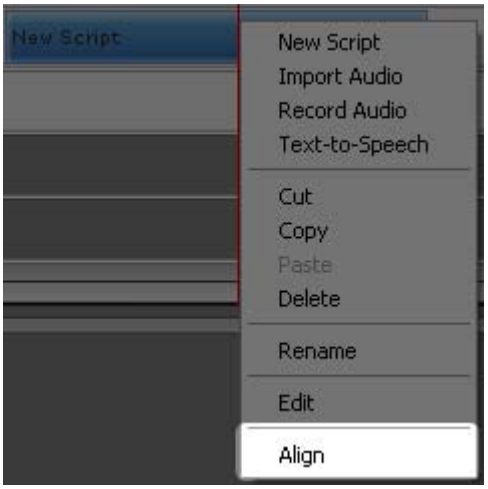
Please follow the steps to align the model:

1. Prepare one talking script and add it to the character track in the **Stage** panel.
2. Make sure the position of the model is modified at the end of this talking script by setting a **Transform** key.

3. Add a second talking script behind the talking script in step 1. Set one or more **Transform** keys in the second talking script.

Key added in the second talking script.

4. Right-click on the second clip and select **Align** from the menu.



CrazyTalk automatically offsets all the transform keys in the second talking script to align them to the first talking script.

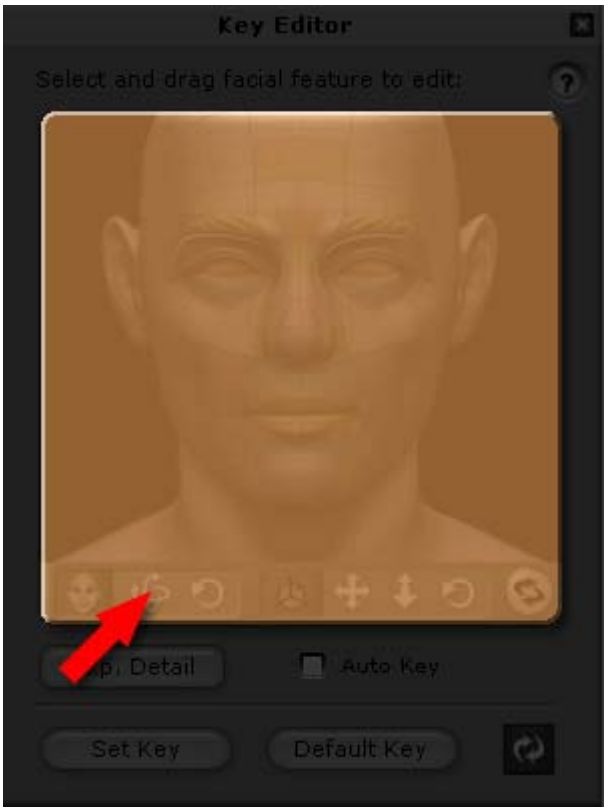
Note:

- The Align feature affects all Transform data, including Move, Rotate and Scale data.

Using Key Editor: Setting the Eye Keys

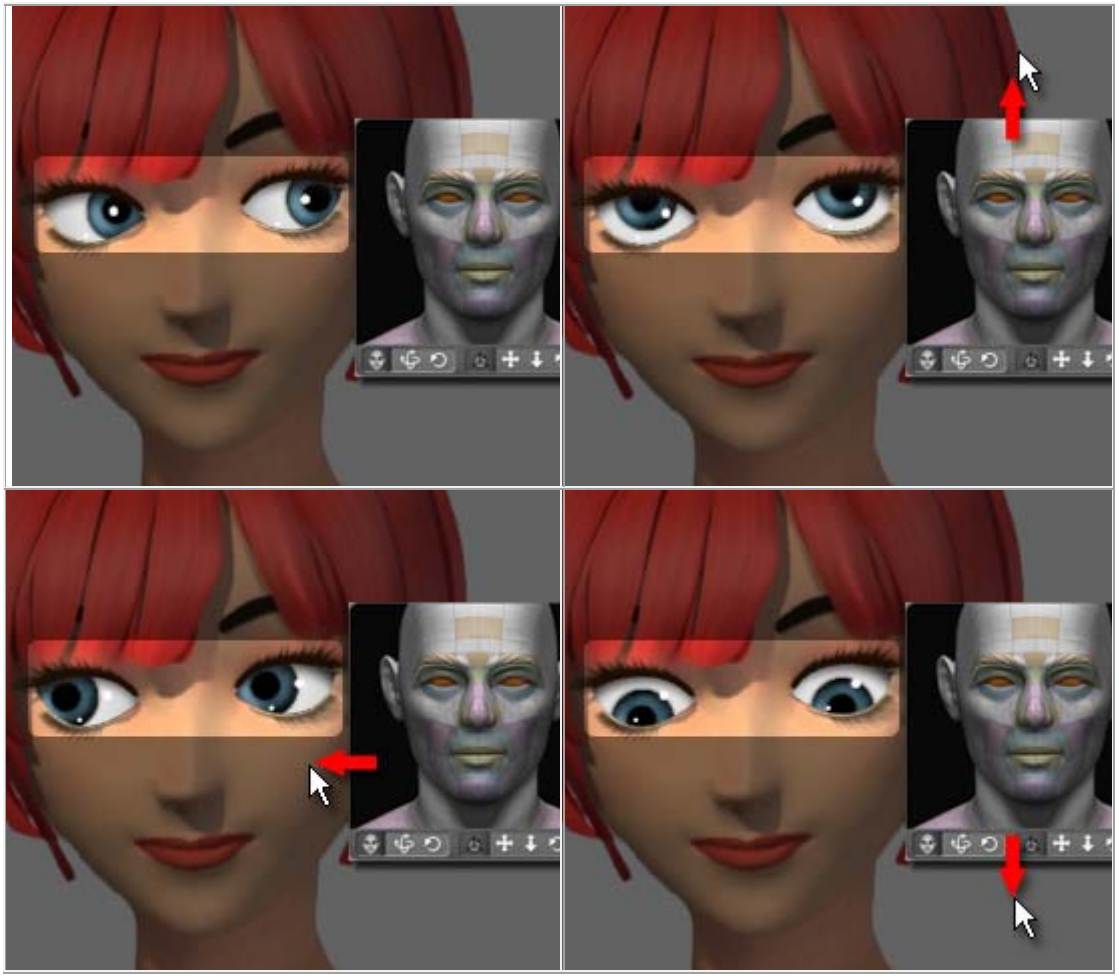
1. Select the **Eyes** in the pane.

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



The Interactive Area

3. Drag the mouse outside the interactive area to make the changes. The character's eyes starts to move along with your mouse.



4. Click the **Set Key**

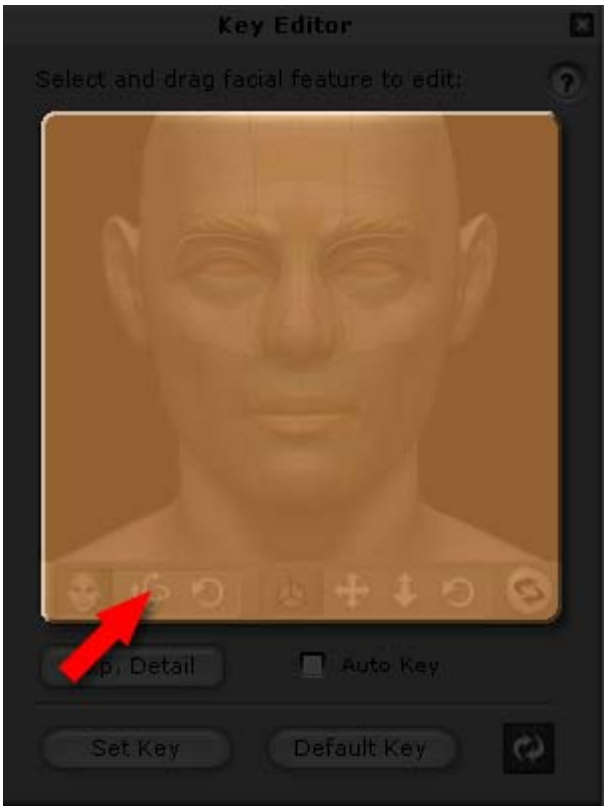
button to save the changes to the eye position.

Note:
o Check the **Auto Key** checkbox so you will not need to click the **Set Key** button repeatedly. The **Key Editor** will automatically convert the movement of your input device into keys.

Using Key Editor: Setting the Shoulder Keys

1. Select the **Shoulders** in the pane.

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



The Interactive Area

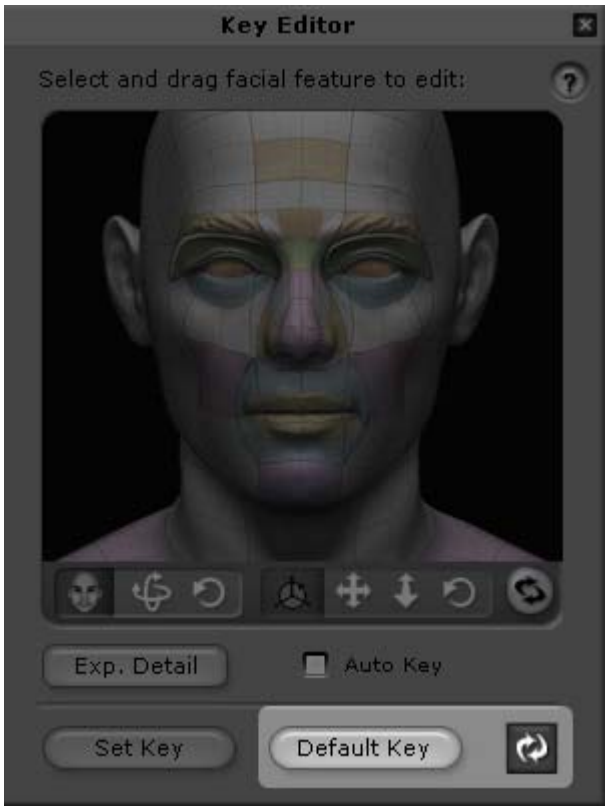
3. The character's shoulders start to move along with your mouse.

4. Click the **Set Key**

button to save the desired shoulder position.

Using Key Editor: Resuming Key and Setting Default Key

There are two features in the **Key Editor**, **Resume** and **Default Key**, which help you a lot when you want to retrieve the status of the features of the model.



Resuming Key

When you want to discard new settings (facial expressions, head rotation and model transform) and go back to the last saved status, you may use this method:

1. Double-click on the desired key for editing to invoke the **Key Editor** panel. Please note that the key contains offset data already.

2. Select any feature in the **Key Editor** and drag in the interactive area to modify the model's features as many times as you want.

3. Since it is hard to retrieve the original offset status manually, click the **Resume** button to abort all modifications.

Setting Default Key

Each time you want to remove all the facial expressions and go back to the neutral expression state or remove the transformation key (rotation, location, scale) and go back to its initial status, perform the following steps:

1. Double-click on the desired key for editing to invoke the **Key Editor** panel. Please note that the key contains offset data already.

2. Select any feature in the **Key Editor** and drag in the interactive area to modify the model's features as many times as you want.

3. Click the **Default Key** button and the offset data will be cleared. The model turns back to its neutral appearance. The original key will be replaced by a neutral one.

Note:

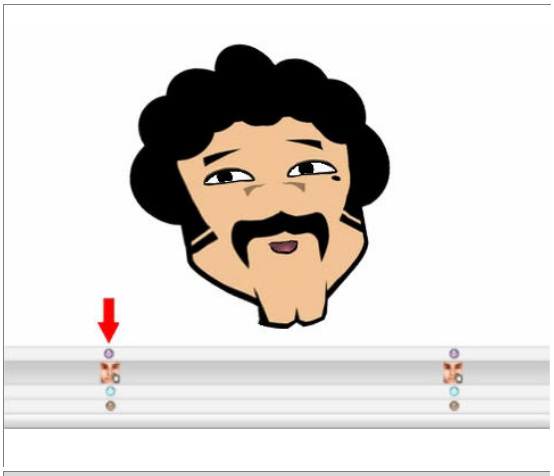
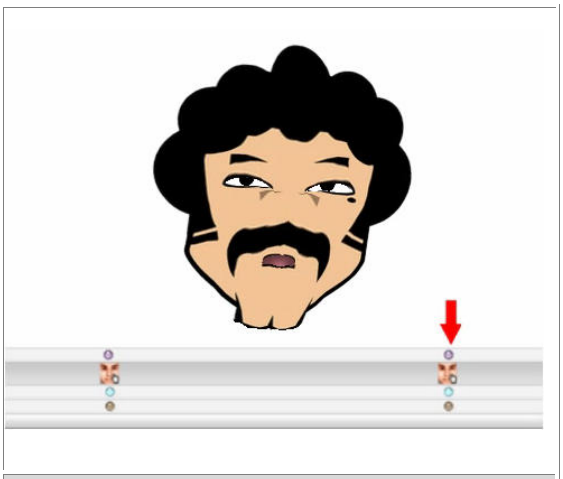
- If you focus on the **Voice** or **Motion Clip** track and click **Default Key**, the **Key Editor** add keys to **Transform**, **Face (Face Strength)**, **Head**, **Eye**, **Shoulder** tracks in the method described above.
- You may add a default key into individual tracks by clicking on the target track before clicking the **Default Key** button.

Transition Effects Between Two Keys

In **CrazyTalk**, all the animation starts with keys set in different tracks. The transition effects between keys are automatically interpolated by **CrazyTalk**.

Transition Effect Between Two Keys

Transition effects are generated as below illustration shows:

	
First Key	**Second Key**

Model Status before First Key

If the first key is not located at the start time frame of a talking script, the transition effect does not happen.

Using Motion Clips: Creating and Adding Motion Clips

CrazyTalk facilitates the collection of keys from various tracks and grouping them as a custom **Motion Clips**. You may save clips into the gallery and apply them to any other project at any time.

Note:

- The maximum amount of motion clips is 32.

Creating Motion Clips

- Grouping
- Puppeteering Panel

Adding a Motion Clip to the Gallery

1. Select a desired motion clip in the **Motion Clip** track.
2. Click the **Add** button or right-click on the selected motion clip and choose **Add Clip** from the menu.

Converting and Adding a Time Sequence into a Motion Clip

1. Drag on the **Motion Clip** track to select a partial sequence.
2. Right-click on the selected sequence and choose **Add clip** from the menu.

   The sequence will be converted into a motion clip and added to the gallery.

Note:

- If you click the **Add** button while holding the **Shift** key, **CrazyTalk** saves the ***SFX*** images of each frame in **BMP** format, which can accelerate the saving speed but increase the size of the motion clip.

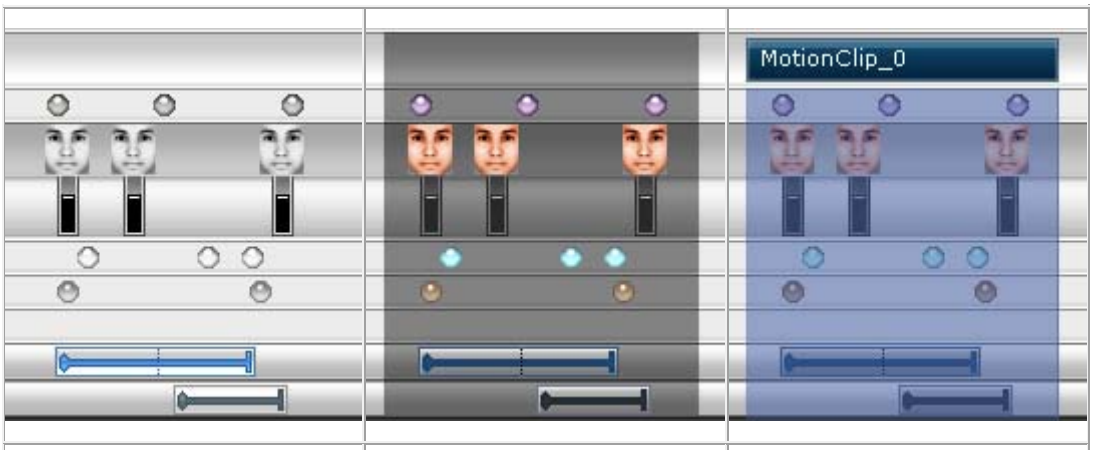
Using Motion Clips: Grouping and Ungrouping

If you have a script with keys edited, you can select a partial sequence to create a custom motion clip for further use.

Grouping to create a motion clip

1. Drag on the **Motion Clip** track to select a partial sequence.
2. Right-click on the selected sequence and choose **Group** from the menu.

   You may also click the **Group** button.



Before Grouping	Selection on Motion Clip Track	After Grouping

Ungrouping a motion clip

1. Click to select a motion clip.
2. Right-click on it and select **Ungroup** from the menu. You may also click the **Ungroup** button. The keys in the motion clip will be dissected and can then be edited individually.

Note:

If the property boxes of the motion clip are checked, ungrouping a motion clip will keep the keys in the overlapped area.

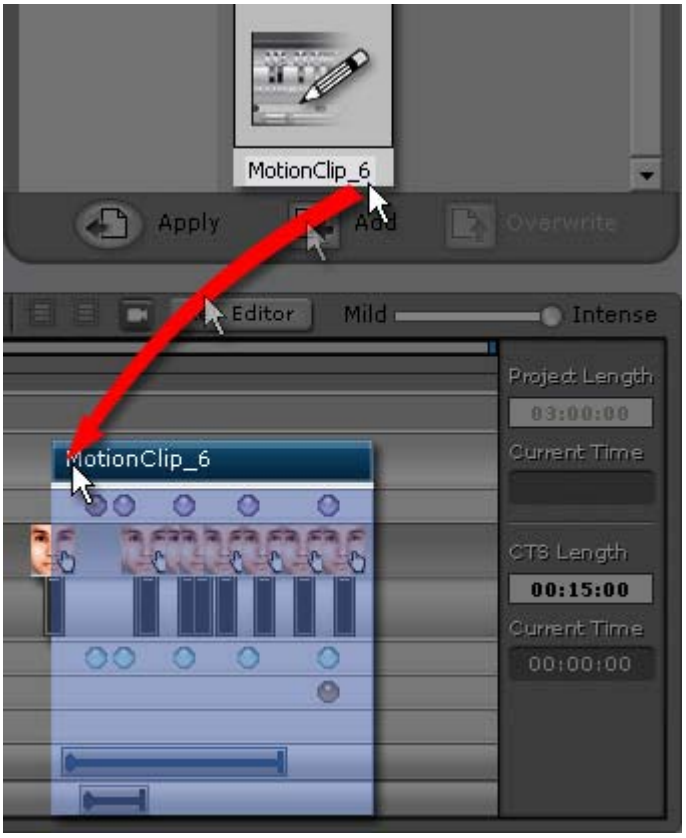
Using Motion Clips: Applying Motion Clips

Applying a Motion Clip

- Double-click on a clip from the gallery to insert it into the current time on the timeline.

- Select a clip from the gallery and click the **Apply** button to insert the clip into the current time on the timeline.

- Alternatively, you may drag and drop the desired clip from the gallery onto any point of the timeline.

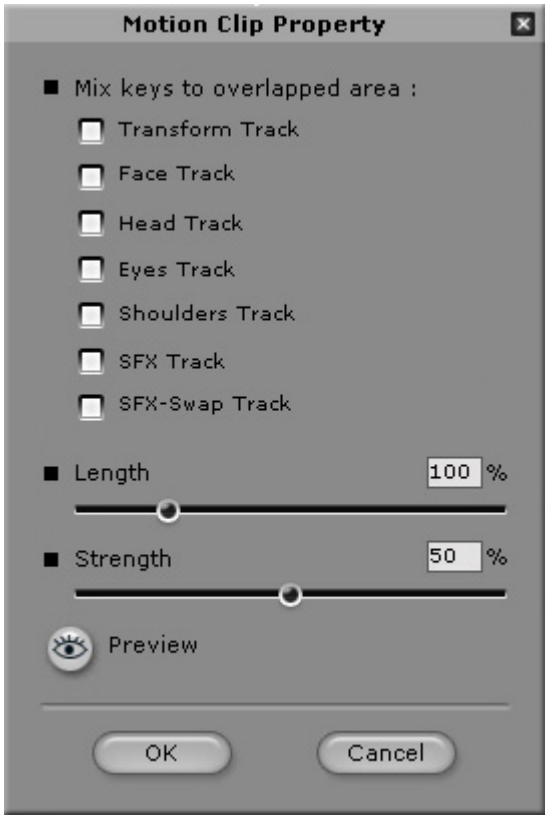


Drag and Drop

Using Motion Clips: Motion Clip Property

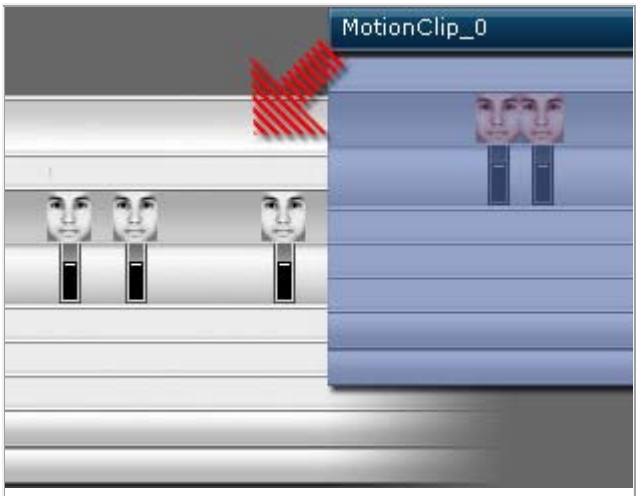
Motion Clip Property

After a motion clip is inserted, right-click on it and choose **Property** from the menu, or double-click on the caption of the motion clip in the motion clip track. You are prompted with the **Motion Clip Property** panel. The **Motion Clip Property** settings determine how **CrazyTalk** processes the overlapped clip area, replacing or mixing with the keys of the underlying tracks.

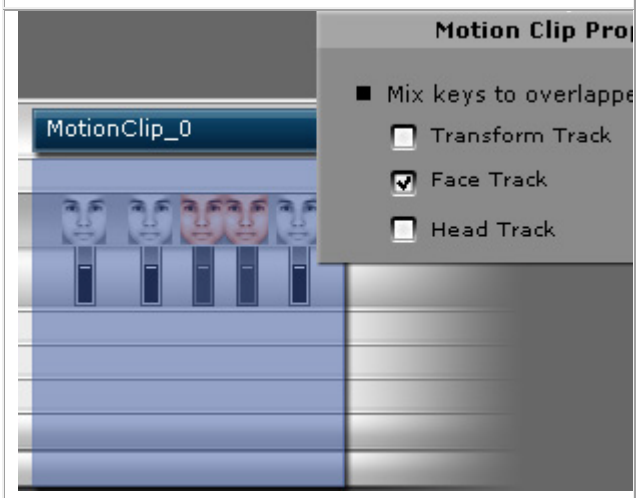


- Check the individual checkboxes so the keys that are overlapped by the motion clip are also used to determine the motion of your character.
- Adjust the **Length** slider to specify the speed of the motion clip.
- Adjust the **Strength** slider to specify the strength weight of all the keys in the motion clip. The default value is 50%.
- Click the **Preview** button to preview the result of the settings in the panel.

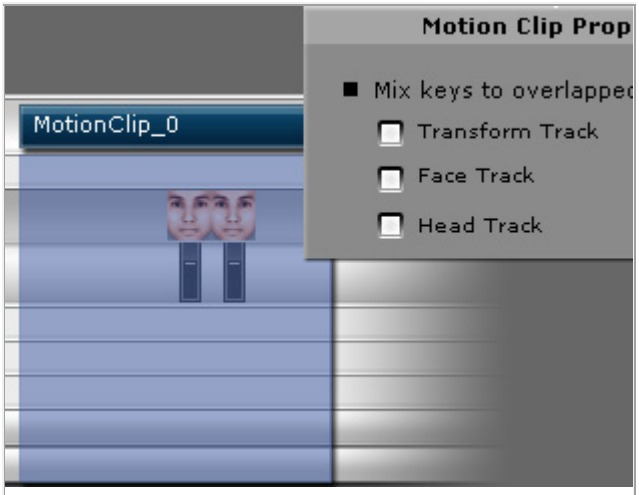
Mixing Principles:



A prepared motion clip is about to be applied to the timeline that already contains keys.



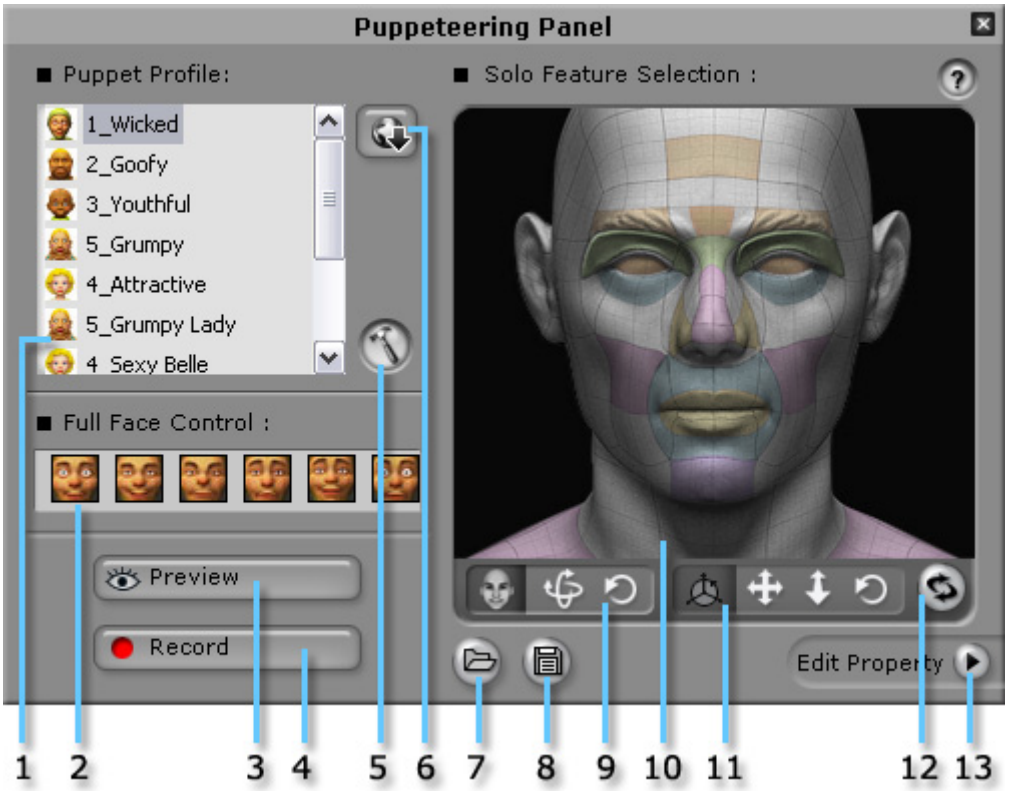
Face Track: Checked. The keys on the timeline are blended with those in the motion clip.



Face Track: Unchecked. The keys on the timeline are replaced by the ones in the motion clip.

Utilizing Puppeteering Panel: Introducing the Puppeteering Panel

CrazyTalk interfaces facial animation with revolutionary real-time puppeteering controls empowering you with command over character facial expressions.



1. Puppet Profile	Select one of the built-in profiles with different personality from the list. Each profile contains various expressions.
2. Full Face Control	Select one of the expressions with pre-defined weight settings for various facial features.
3. Preview	Click this button and then press the **Space bar** to preview the expressions triggered by your input device (Mouse by default).
4. Record	Click this button and then press **Space bar** to start recording a motion clip. Press the **Enter key** to start half-speed recording mode. While you move your mouse to drive the motion expression during the recording,

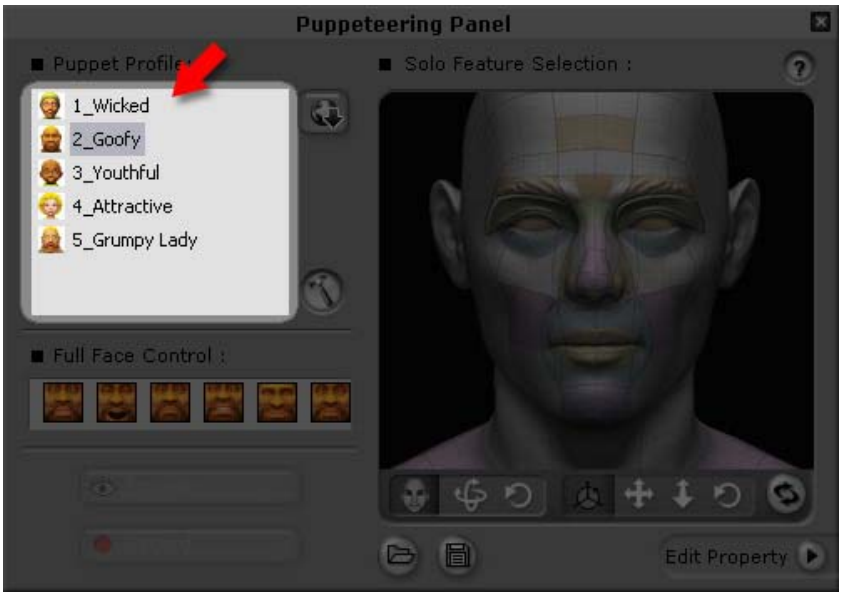
	keys will be automatically inserted into the timeline.
5. Settings	Click this button to invoke the **Puppeteering Settings** panel.
6. Add From Web	Click this button to open our content store on the web to purchase more profiles.
7. Open Profile	Click this button to load profiles
8. Save Profile	Click this button to save profiles
9. Add Head Key	Select these to change the rotation/tilt of the head. The changes will be converted into keys during recording automatically.
10. Solo Feature Selection	Select to highlight any desired features to change. The changes will be converted into keys during recording automatically.
11. Add Transform Key	Select these to move the model. The changes will be converted into keys during recording automatically.
12. Clear Selection	Deselect any highlighted features.
13. Edit Property	Adjust the weight of a feature in detail when your input device moves (Mouse by default).

Utilizing Puppeteering Panel: Full Face Control Puppeteering

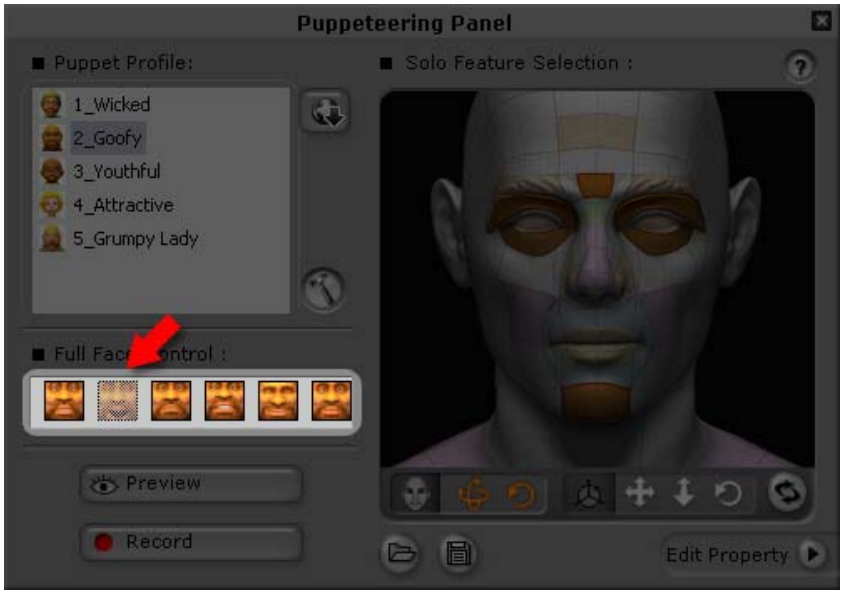
1. Drag on the **Motion Clip** track to select a partial sequence or click on any point of time to start a motion clip for recording.

2. Click the **Puppet Control** button.

3. Pick a desired profile from the **Puppet Profile** list.

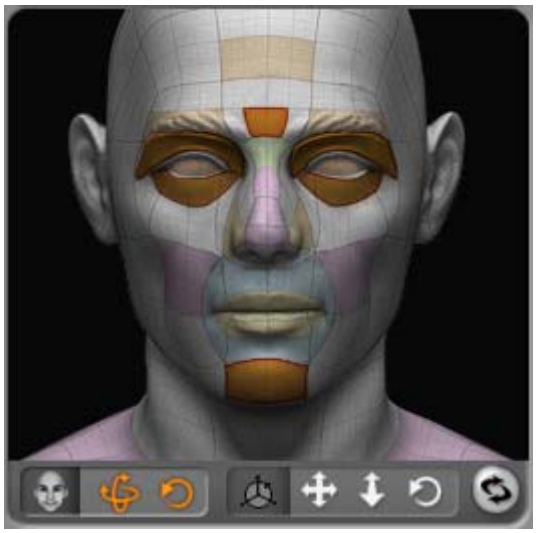


4. Choose a preset in the **Full Face Control** list.



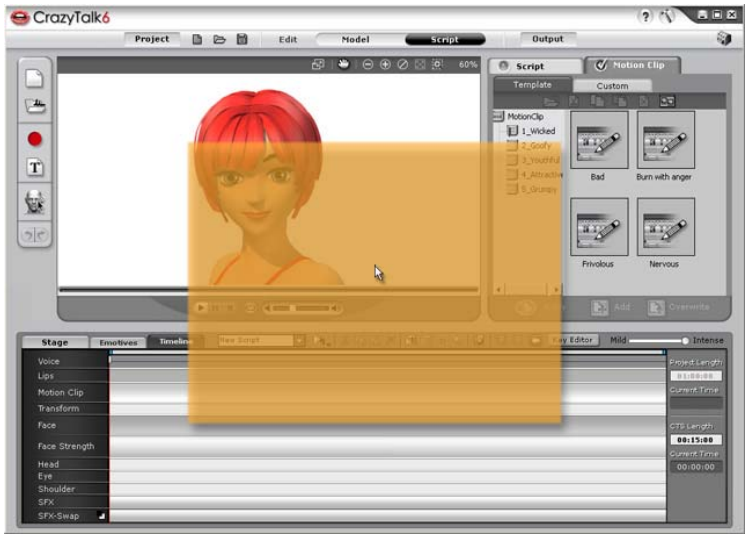
Note:

- Click the **Add From Web** button to visit our web site to purchase more profiles.
- You may notice that some features in the **Solo Feature Selection** pane are highlighted automatically.



- The highlighted features will have keys added to the corresponding tracks.

5. Click the **Preview** button and press the **Space bar** to start previewing. The cursor will be automatically positioned in the center of the **CrazyTalk** window.



The Mouse Interactive Area for Puppeteering

6. Move your mouse to puppeteer your model. Press the **Space bar** again to stop previewing.

7. Click the **Record**

button and press the **Space bar** to start recording the motion as puppeteered by your mouse. (Press the **Enter key** to start half-speed recording mode)

8. Once the recording stops, keys will be added into the corresponding tracks automatically.

Note:
o You can use the hotkeys 1, 2, 3, 4, 5 to switch to another **Puppet Profile** and Q, W, E, R, T, Y to change to another **Full Face Control** profile during the previewing or recording.

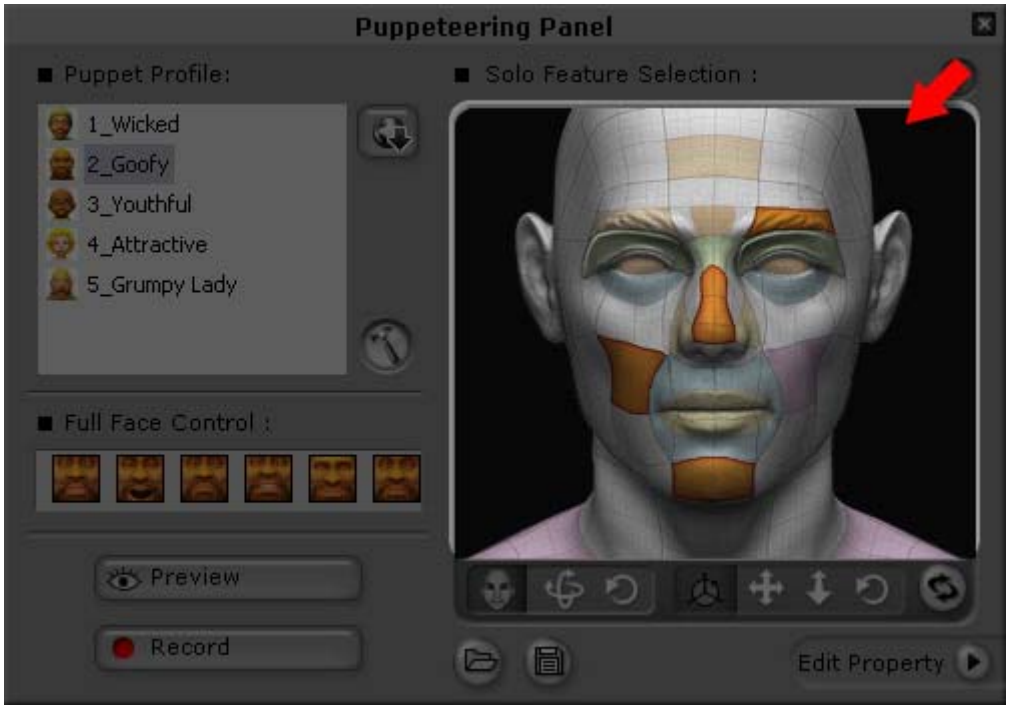
Utilizing Puppeteering Panel: Solo Feature Selection Puppeteering

1. Drag on the **Motion Clip** track to select a partial sequence or click on any point of time to set the start of the motion clip for recording.

2. Click the **Puppet Control** button.

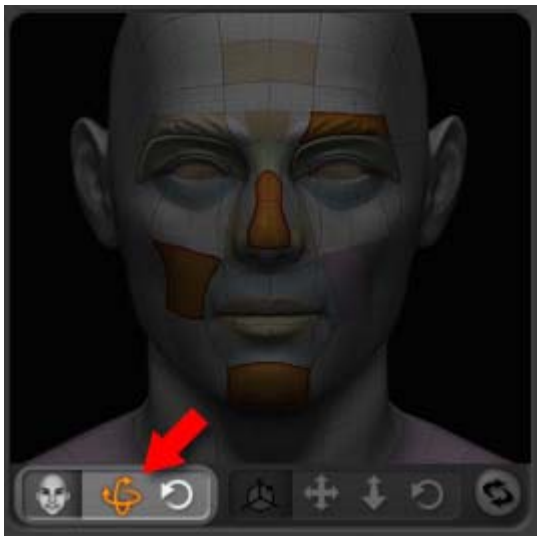
3. Click the **Resume** button to clear any selections that might have been done accidentally.

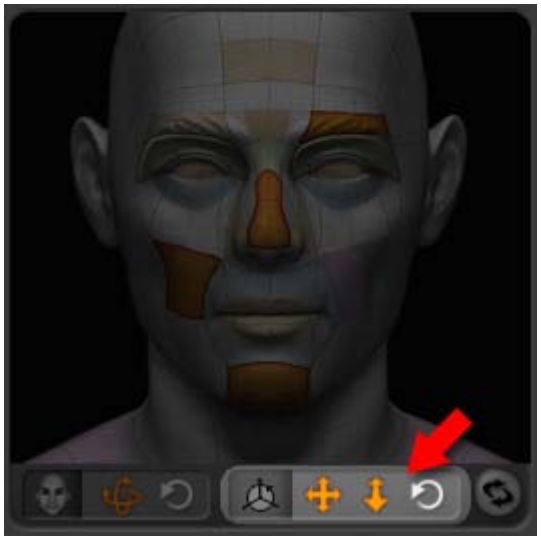
4. Pick the desired facial features from the **Solo Feature Selection** pane.



Note:

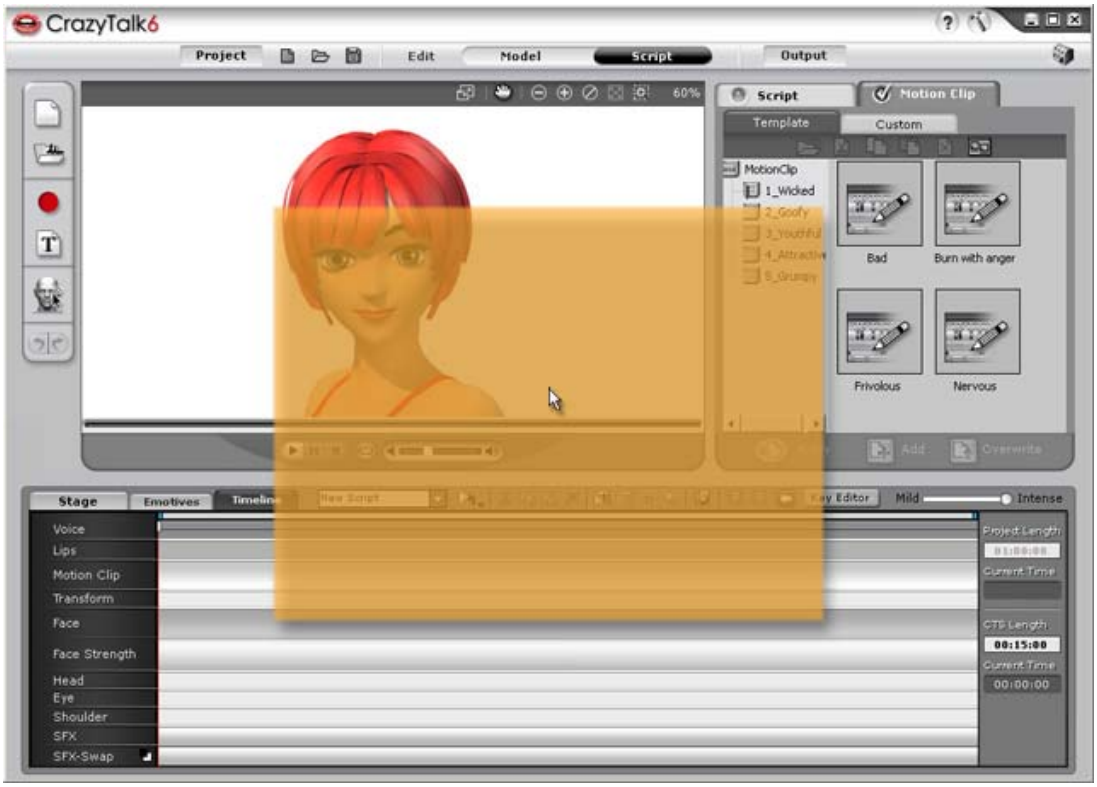
- The highlighted features will have keys added to the corresponding tracks.
- You may optionally select the **Head** rotation or **Model** movement features to be recorded as well.





5. Click the **Preview**

and press the **Space bar** to start previewing. The cursor will be automatically positioned in the center of the **CrazyTalk** window.



The Mouse Interactive Area for Puppeteering

6. Move your mouse to puppeteer your model. Press the **Space bar** again to stop previewing.

7. Click the **Record**

button and press the **Space bar** to start recording the motion as puppeteered by your mouse. (Press the **Enter key** to start half-speed recording mode)

8. Once the recording stops, keys will be added into the corresponding tracks automatically.

Note:
o You can use the hotkeys 1, 2, 3, 4, 5 to switch to another **Puppet Profile** and Q, W, E, R, T, Y to change to another **Full Face Control** profile during the previewing or recording.

Utilizing Puppeteering Panel: Recording Blinking

Instead of modifying the keys in the **Eyes** track, you may easily record the blinking of eyes in the motion clips.

1. Following features can be used to control blinking.

Blink Both Eyes	
Blink Left Eye	
Blink Right Eye	

2. Click the **Preview** button and press the **Space bar** to start previewing.

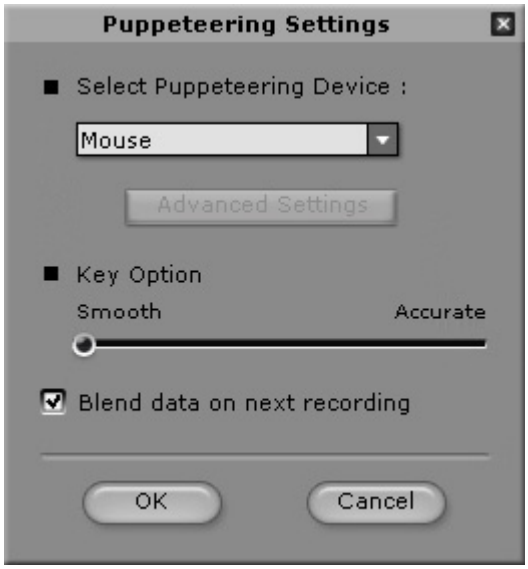
3. Press your mouse button to puppeteer your model to blink accordingly.

4. Click the **Record** button and press the **Space bar** to start recording and press your mouse button whenever you want the model to blink.

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

Utilizing Puppeteering Panel: Puppeteering Settings

In the Puppeteering Panel, click the **Setting** to invoke the **Puppeteering Settings** panel.



- **Select Puppeteering Device** - You may specify the input device that is used to trigger the movements of your character during recording.
- **Key Option** - Recording in various levels of accuracy. The closer the slider is moved to the **Accurate** end, the more details will be recorded as the mouse moves.
- **Blend data on next recording** - Activate this checkbox so the new motions of the selected features are blended into to existing keys after recording.

Utilizing Puppeteering Panel: Creating Custom Puppet Profiles

You can create your own unique puppet profile or modify existing profiles from the **Edit Property** pane.

Creating and Saving Custom Profiles

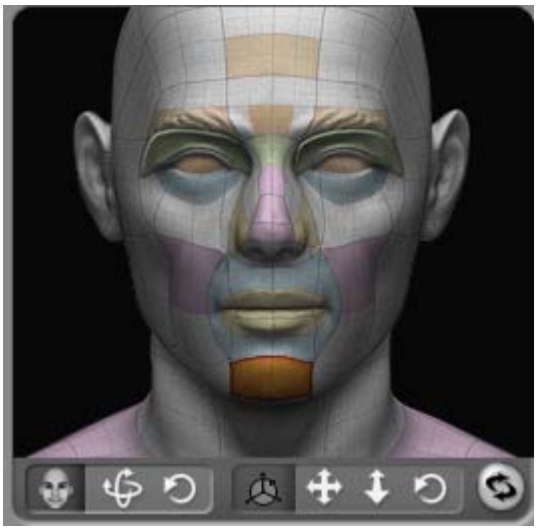
1. Click the **Clear Selection** button to deselect all features.
2. Pick the desired features in the **Solo Feature Selection** pane.
3. Click the **Preview**

button, press the **Space bar**, and move your input device (mouse by default) to preview the movements of the selected features.
4. If you are satisfied with the result, click the **Save Profile** button to save your custom profile.

Adjusting Weight

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

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



2. Click the **Edit Property** button to expand the weight pane.

3. Modify the values in the **Weight** column of the corresponding feature to specify the weight of the movements triggered by the movement of your input device.

Facial	Feature	Weight
Face	Inner and Outer Brows	0
	Brows	0
	Left Brow	0
	Right Brow	0
	Eyes Blink	0
	Blink Left Eye	0
	Blink Right Eye	0
	Left Lower Lid	0
	Right Lower Lid	0
	Wrinkling Nose	0
	Left Nose	0
	Right Nose	0
	Raise/Droop Lip	0
	Sip Lip	0
	Left Cheek	0
	Right Cheek	0
	Jaw	100
Head	Vertical Rotation	0
	Horizontal Rotation	0
	Head Tilting	0
Transform	Horizontal Movement	0
	Vertical Movement	0
	Zoom	0
	Rotate	0
	Left X	0

4. Click the **Preview**

button, press the **Space bar**, and move your input device (mouse by default) to preview the movements of the selected features.

5. Do steps 3 and 4 repeatedly until you obtain satisfying results.

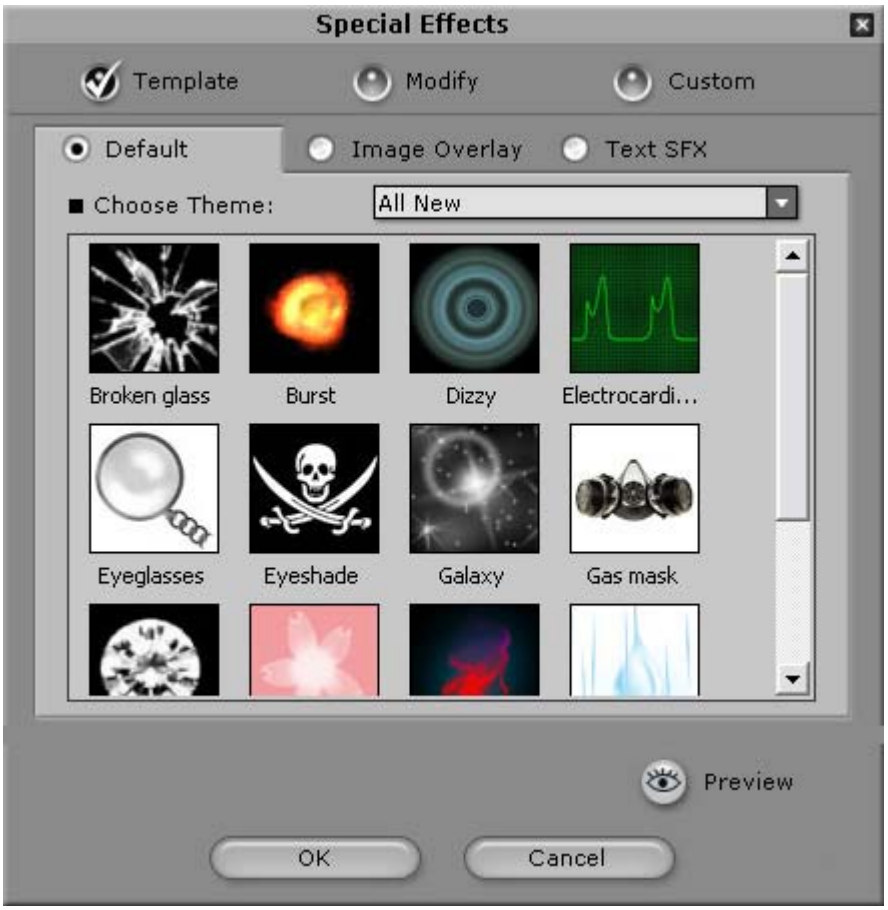
6. Click the **Save Profile** button to save your custom profile.

SFX: Applying Special Effects

You can apply comic special effects such as disguises, metaphor effects suitable to the script, or status symbols expressing the nature of the script with **CrazyTalk**.

Applying a Special Effect

1. Double-click anywhere on the **SFX (Special Effects Animation)** or **SFX-Swap** track to apply special effects. You can also select part of the timeline to apply the special effect to that section only.



2. Select a special effect or comic theme from the **Choose Theme** drop-down list. A set of special effects for each theme is displayed.

3. Select a special effect from the desired theme to see how it looks on the model.

4. Click the **Preview** button to play a small part of the script and preview the special effect.

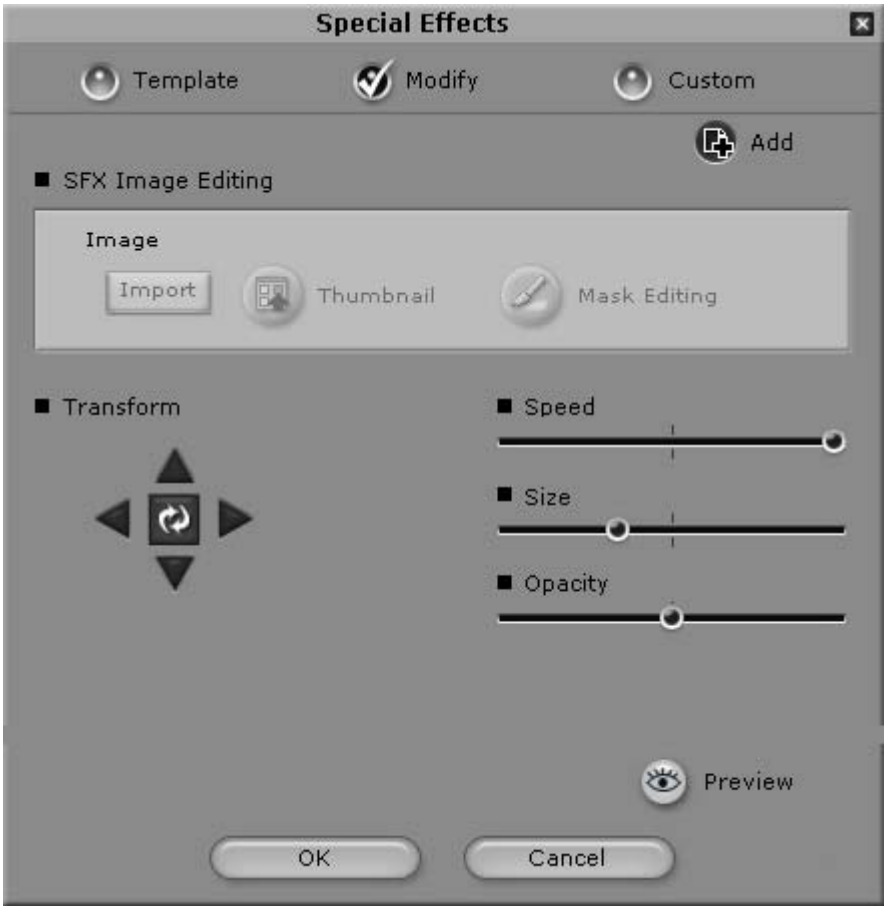
5. Click **OK** when done.

The special effect is applied to only a small section of the script and indicated on the track by a grey box. To apply the effect over a wider range of the script, drag the box to enlarge it. Move it to other parts of the script as desired.

Modifying a Special Effect

1. Select a special effect.

2. Select the **Modify** tab on the Special Effects dialog.



3. Use the **Transform** feature. Click the four arrows to move the special effect around the screen. Click the **Resume** button to clear your transformation settings and start new adjustments.

4. Move the **Speed** slider to speed up or slow down the special effect.

5. Move the **Size** slider to enlarge or reduce the size of the special effect.

6. Move the **Opacity** slider to specify the opacity of the special effect.

7. Click the **Preview** button to see the result.

8. Press the **OK** button to apply the special effect or click the **Add** button to add this special effect to your **Custom** gallery.

SFX: Loop and Speed

You may specify to loop and/or change the speed of the special effects.

Loop the SFX

1. Move your mouse to the right edge of the **SFX** key bar. The cursor turns into a double-arrow.

2. Drag the cursor right. The bar starts to duplicate itself in order to loop.

Drag to loop for three times.

Adjust the Speed of the SFX

You may adjust the speed of the **SFX** through the modify page in the **Special Effects** panel by double-clicking on the **SFX** bar. Alternatively, you may adjust the speed on the timeline directly.

1. Move your cursor to the right edge of the **SFX** key bar. The cursor turns into a double-arrow.

2. Press and hold the **Ctrl** key.

3. Drag the cursor left or right to adjust the speed of the **SFX**. (Left: Accelerate; Right: Decelerate)

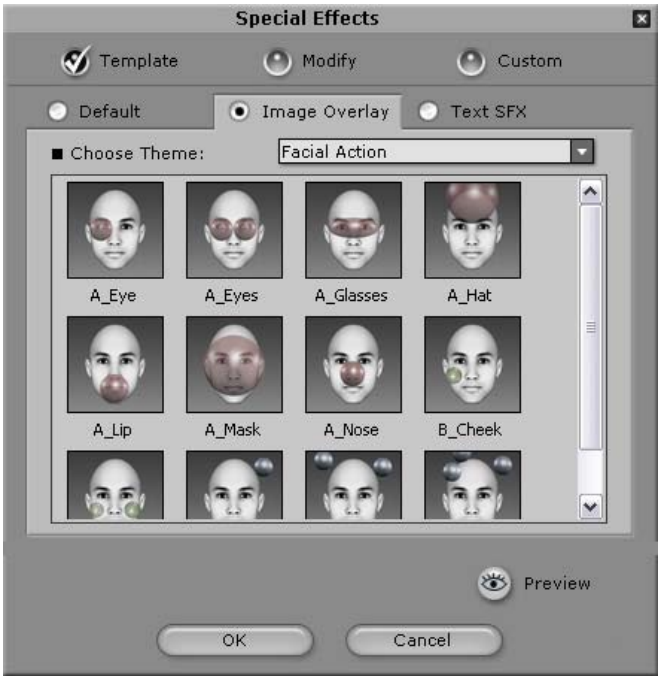
Decelerate the SFX

Accelerate the SFX

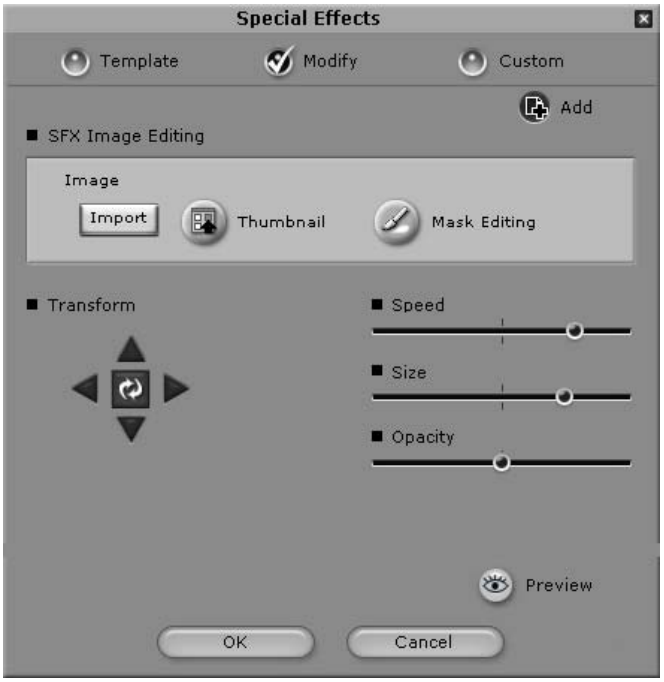
SFX: Creating Custom Special Effects

Creating Custom Special Effects

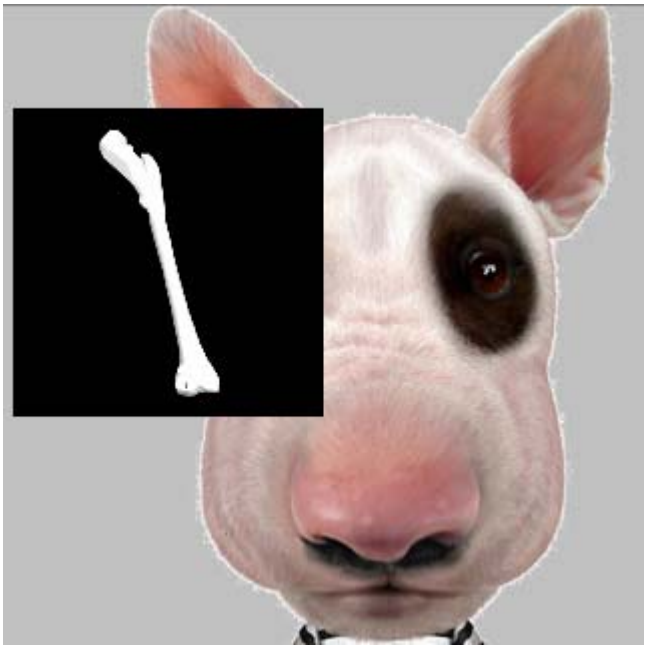
1. Select the **Image Overlay** tab to select a modifiable special effect template.



2. Select the **Modify** tab to modify the selected special effect.

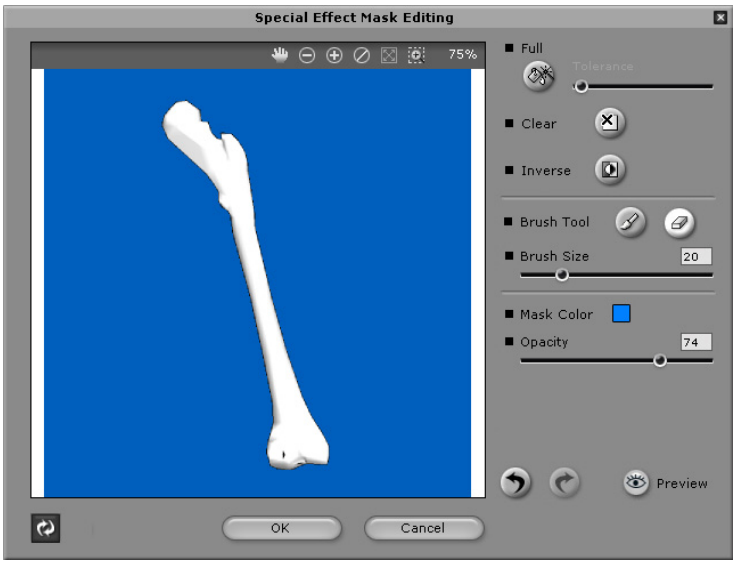


3. Import any image you want to use by clicking the **Import** button. The Image importing function supports animated GIFs. The Image importing function also allows you to import images with alpha channel (PNG, 32bit BMP and TGA).



4. Press the **Thumbnail** button to assign an image as the thumbnail image of the special effect. If you do not assign a thumbnail, **CrazyTalk** will assign the first image to be the thumbnail.

5. Press the **Mask Editing** button to edit the mask. If the imported image includes an alpha channel, it will be used as the mask data and you can skip this step.

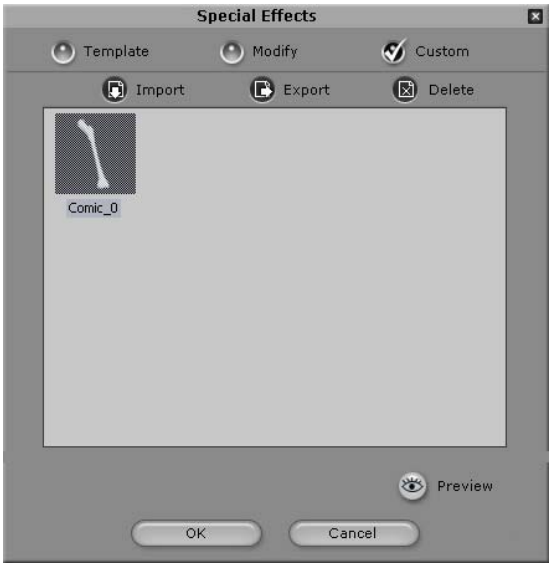


The mask editing is similar to the **Background Mask Editing** (see Background Mask Editing for detail)

6. Click the **Preview** button to play the result.
7. Press the **OK** button to apply or click the **Add** button to add the special effect to your Custom gallery.

Managing a Special Effect

1. Click the **Custom** tab to go to the custom special effects.

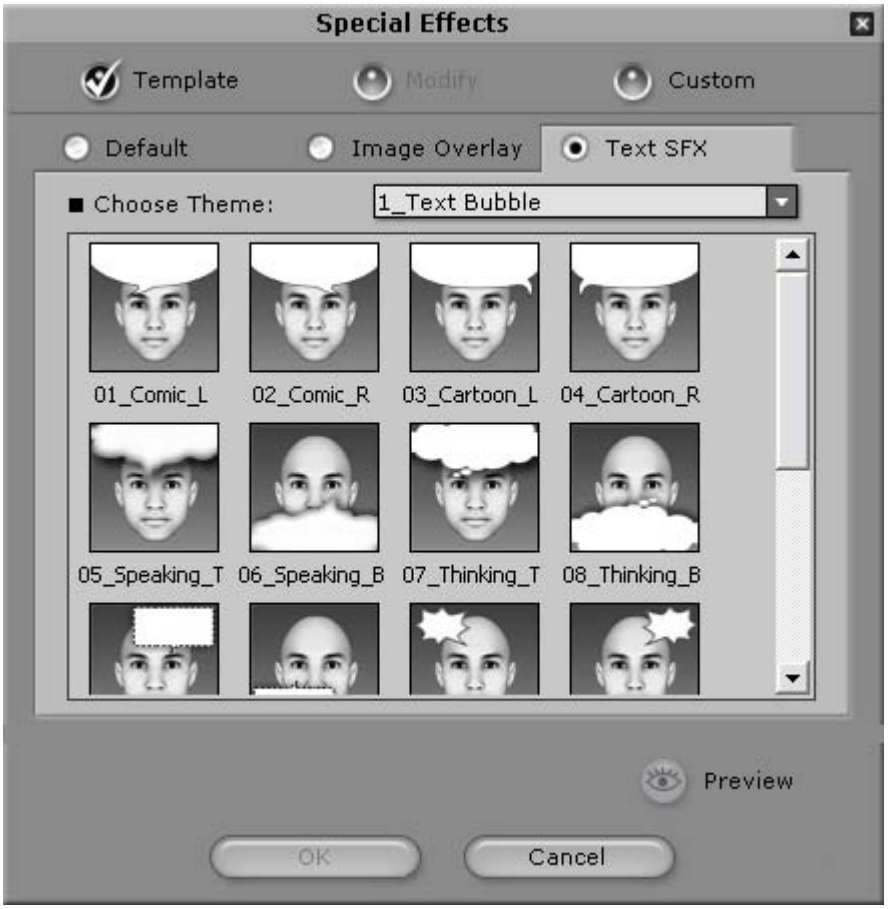


2. Select a special effect and click the **Delete** button to delete the selected special effect.
3. Select a special effect and click the **Export** button - you can export the special effect as .PAK for sharing or backup.
4. Press the **Import** button to import special effect data to your **CrazyTalk**.

SFX: Applying Text Special Effects

Applying a Text Special Effect

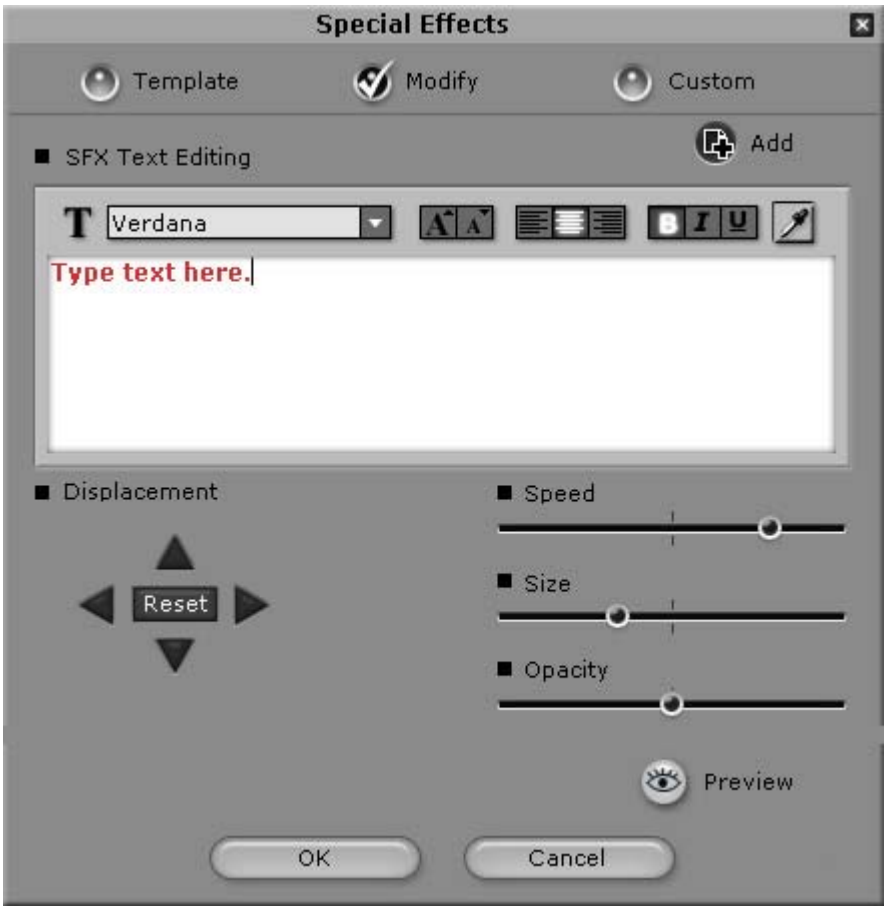
1. Double-click anywhere on the **SFX (Special Effects Animation)** or **SFX-Swap** track to apply special effects. You can also select part of the timeline to apply the special effect to that section only.



2. Select a text effect from the **Choose Theme** drop-down list in the **Text SFX** tab. A set of special effects for each theme is displayed.

3. Select a text special effect from the desired theme to see how it looks on the model.

4. Click the **Modify** tab.



- Utilize the controls in the **Text SFX Editing** section. You may specify the font, the size, the alignment, the style, and the color of the text.
- Use the **Transform** feature. Click the four arrows to move the special effect around the screen. Click the **Resume** button to clear your transformation settings and start new adjustments.
- Move the **Speed** slider to speed up or slow down the special effect.
- Move the **Size** slider to enlarge or reduce the size of special effect.
- Move the **Opacity** slider to specify the opacity of the special effect.

5. Click the **Preview** button to see the result.
6. Press the **OK** button to apply the special effect or click the **Add** button to add this special effect to your **Custom** gallery.

SFX: Swapping Special Effects

CrazyTalk provides an additional SFX track to allow swapping special effects between foreground and background.

1. Double-click anywhere on the **SFX-Swap** track to apply special effects. You can also select part of the timeline to apply the special effect to that section only.

2. Select a special effect (Default, Image Overlay or Text SFX are available). Click the **OK** button to leave this dialogue box.

3. Play the project to view the result.

4. Press the **Black and White** box next to the title of the **SFX-Swap** track to have the special effect move between fore- and background.

Note:
o You must specify the background mask of the image before seeing this change. o The other **SFX** track will always be on the top most layer overlapping the image.

Creating a 3D Stereo Project

- The Concept of 3D Stereo Vision
- Creating a 3D Stereo Project in CrazyTalk
- Environment for Viewing 3D Stereo Media
- Viewing Methods of 3D Stereo Media

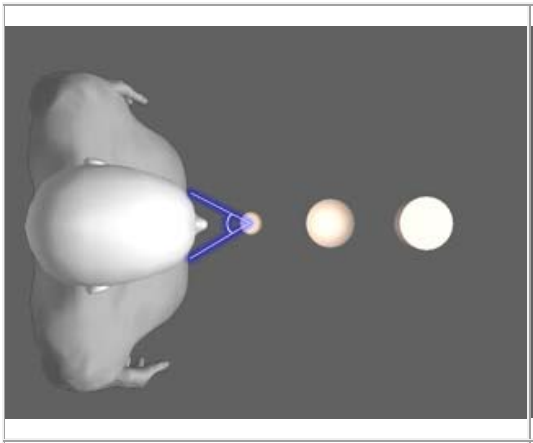
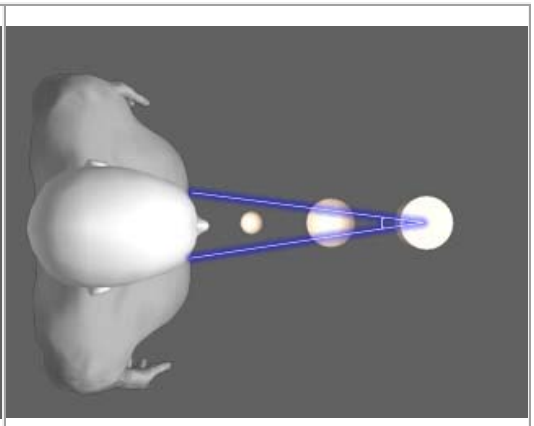
Please visit our web site for Additional Video Demos and How-to Documents.

The Concepts of 3D Stereo Vision

There are two primary factors to generate a 3D stereo vision, **Convergence** and **Parallax**.

Convergence

The convergence is the angle formed by your eyes and the observed object. The higher the angle value is, the nearer the observed object is to your two eyes, and vice versa.

	
High Convergence (Target object is near)	Low Convergence (Target object is far)

Therefore, when the convergence is fixed, any object between you and the convergence point will be closer to you, while the object beyond the convergence point will be farther away from you.

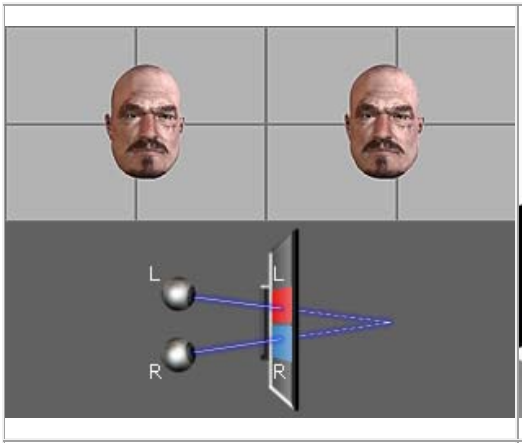
Please note that if the **Convergence** is higher then 6 degrees, which means the object is too close to you, then your eyes feel uneasy. On the contrary, when the value is too small, which means the object is too far, the stereo sensation will be lost.

Parallax

The parallax images are the images passing through to your left and right eyes. All 3D stereo media contain a pair of parallax images that individually, and simultaneously, pass to your left and right eyes. This is to convince your brain that there is an existence of depth in the media.

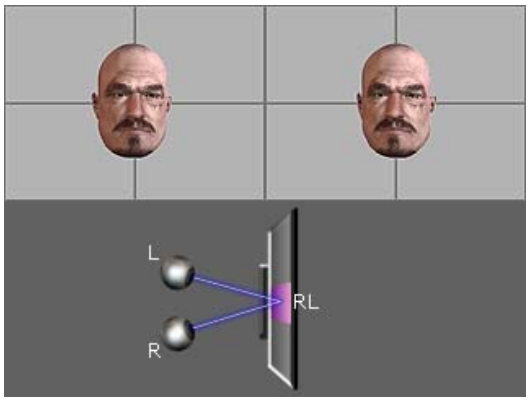
Positive Parallax

When the target object offsets to the right in the left image, and offsets to the left in the right image, then your binocular focus is lead to fall behind the display. This phenomena is called **Positive Parallax**.

	
Your convergence point is lead to fall behind the display.	Positive Parallax

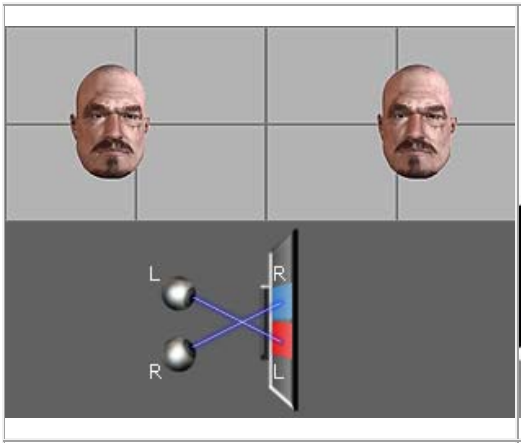
Zero Parallax

When the paired parallax images superimpose on the display, then your binocular focus is lead to fall on the same display, which is the **Zero Parallax**.

	
The L and R image lead your convergence point to fall on the display.	Zero Parallax

Negative Parallax

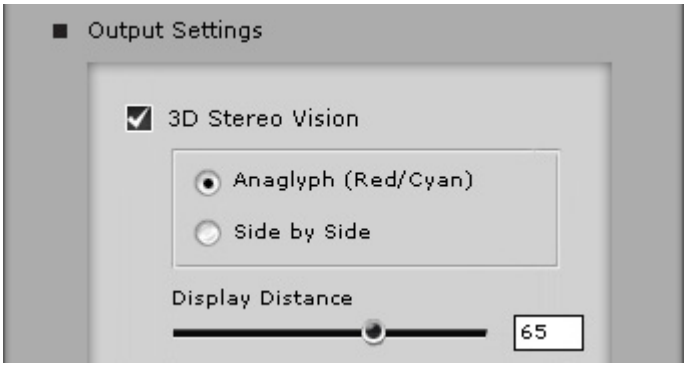
When the target object offsets to the left in the left image, and offsets to the right in the right image, then your binocular focus is lead to fall in front of the display. This phenomena is call **Negative Parallax**.

	
The L and R images lead your convergence point to fall in front of the display.	Negative Parallax

Creating 3D Stereo Projects in CrazyTalk

If you want to output a 3D stereo media, then please follow the steps below:

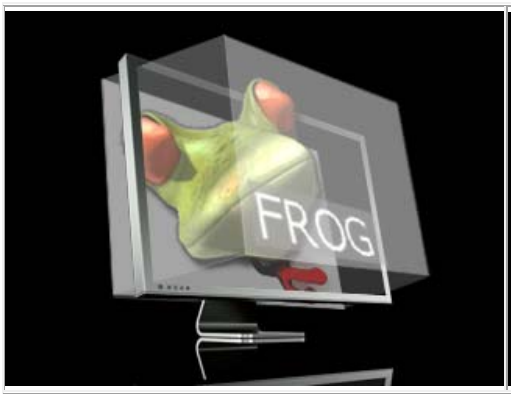
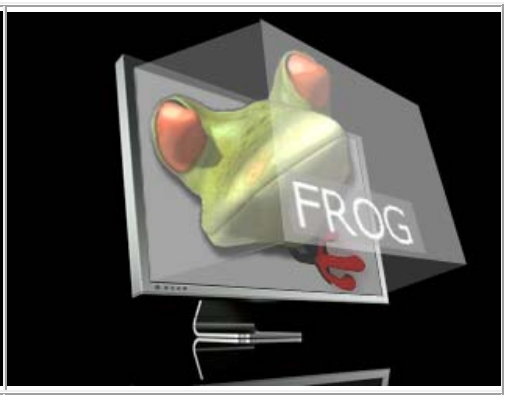
1. In the **Output** page, click on the **Media** tab.
2. Enable the **3D Stereo Vision** box. Choose the **Anaglyph (Red/Cyan)** or **Side by Side** radio button.
3. Drag the slider to define the value for **Display Distance**.



Display Distance

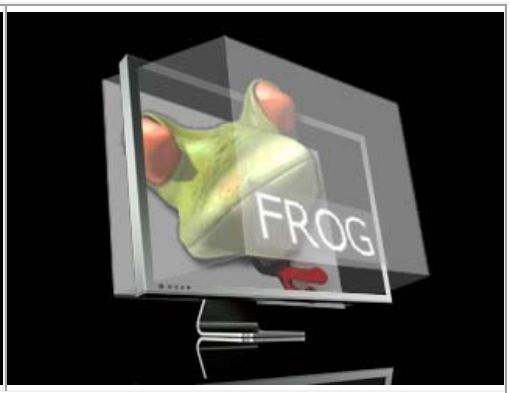
The **Display Distance** value decides the convergence distance as you playback the output media. The higher the value, the closer the objects tend to pop-up in relation to the convergence point. The lower the value, the farther the objects move to the back of the convergence point.

In the illustrations below, the **CrazyTalk** project is taken as a box with the character and comic effects integrated.

	
Display Distance = 0	Display Distance = 100

Profile and Display Distance

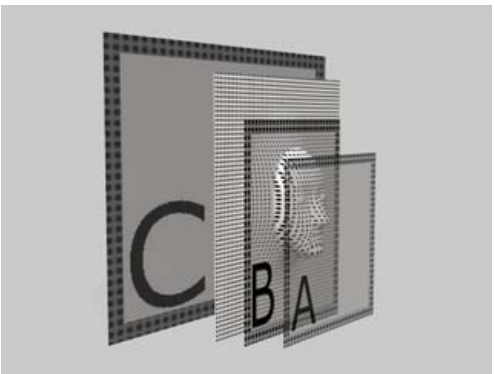
Take note that the profile of the character may affect the depth value of the whole 3D stereo project. For more information, please refer to the Specifying Face Orientation and Style.

	
Profile Strength: Weak (Display Distance = 0)	Profile Strength: Strong (Display Distance = 0)

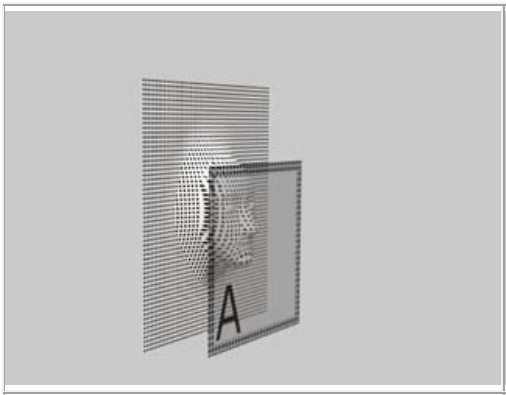
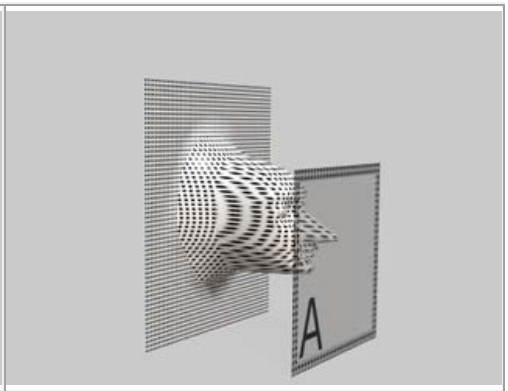
Since all **CrazyTalk** projects are layer-based, the user should properly arrange all special effects and characters for a better 3D stereo result. .

Layers in CrazyTalk

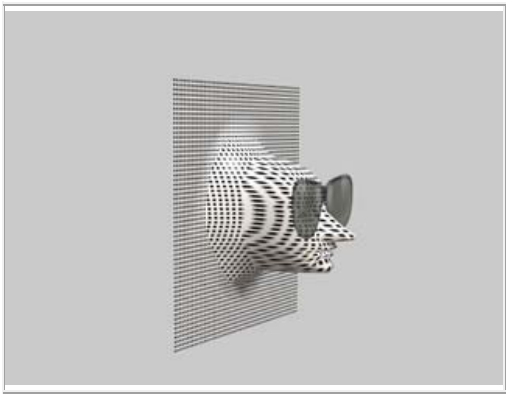
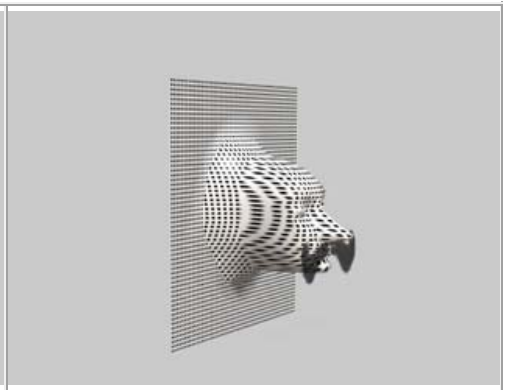
There are 4 layers in one **CrazyTalk** project:



- **Layer A**: This layer shows the effects on the **SFX** track. It is located at the top of the character's nose. If the face profile is strong, then **Layer A** will be farther away from the character.

	
Low Profile Strength	High Profile Strength

- **Layer B**: This layer shows the effects on the **SFX-Swap** track. It is located between the character and **Layer A**. Also, depending on the personality of the comic effect, the layer may be at the position of the eyes, nose or mouth.

	
Glasses Comic Effect	Mustache Comic Effect

- **Character Layer**: This is the character layer. You may use the mask feature to cut out the character.

- **Layer C**: This layer shows the background color or image. When the **SFX-Swap** track contains effects, and it is swapped to the back of the character, the effect will superimpose itself on this layer.

Recommendations for Creating an Appropriate 3D stereo Media

If you want to prevent depth conflict issues in your 3D stereo media, then please follow the rules below:

- Always set the **Text SFX**, the **Full Screen**, **Transition**, and the **Illustration** effects on **SFX Track** .This will ensure they are on **Layer A**.

- Always set the facial related comic effects on **SFX-Swap Track** to ensure they are on **Layer B**.

- Please remember that the effects in the **SFX-Swap** track will always be put onto **Layer C** if the status of the track is set behind the character.

Environment for Viewing 3D Stereo Media

After exporting your 3D stereo content, you may need some specific viewing devices.

	No 3D Device Required	3D Device Required	
	Anaglyph (Red/Cyan)	**Polarization**	**Shutter**
Stereo Format	Anaglyph	Side by Side	Side by Side
Player	Any General Video Player	3D Player (Usually Bundled with 3D Displays) **Free** Stereo Movie Maker Stereo Movie Player **Paid** DDD Player Stereoscopic	3D Player (Usually Bundled with 3D Displays) **Free** • Stereo Movie Maker • Stereo Movie Player • nVidia 3D Vision Player **Paid** DDD Player Stereoscopic
Glasses	Red/Cyan Glasses 3D Passive Glasses List	Polarization Glasses 3D Passive Glasses List	Shutter Glasses 3D Active Shutter Glasses List
Display	General Display	3D Display (Polarization)	3D Display (Shutter)
Graphic Card	General Graphic Card	General Graphic Card	3D Graphic Card (nVidia 9600 or above) NVidia Total Solution
For more information on available 3D products, please refer to the Available 3D			

Products page.

Also visit our web site: Additional Video Demos and How-to Documents .

Viewing Methods of 3D Stereo Media

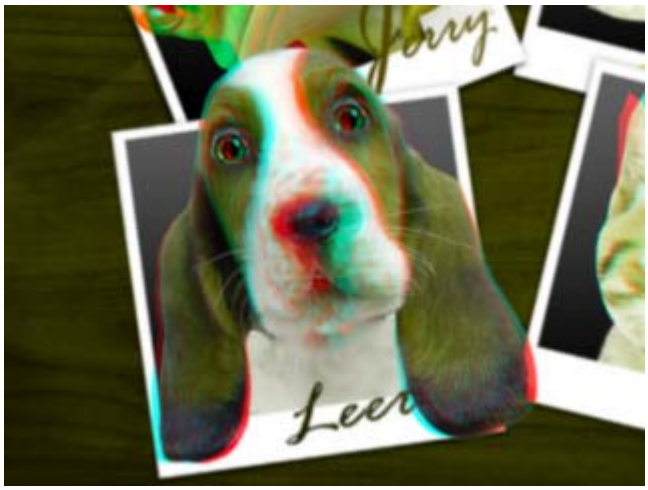
- Viewing with Any Device
- Viewing with Specific External Devices
- Viewing with Bare Eyes
- Viewing on YouTube

Viewing with Any Device

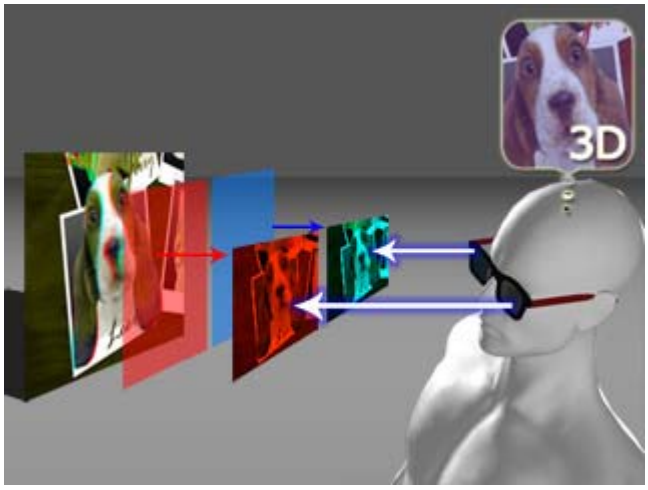
If you would like to view your 3D stereo media with any common device, then you may export the media in **Anaglyph** format. The only equipment needed is a pair of **Red-Cyan** glasses.

Anaglyph (Red/Cyan) Method

This method employs anaglyph media and anaglyph filters. Anaglyph media can be videos or images made of two color layers. These two layers, containing differently filtered colored images for left and right eyes (as described above), superimpose in each frame (for video) or image.



In order to produce the sensation of depth, you must use two identical color filters (**Red-Cyan** glasses) to pass images separately to the left and right eyes. However, this method can result in color-loss issues due to the colored filters.



Viewing with Specific External Devices

If you would like to view your 3D stereo media without any color loss issue present in the anaglyph solution, then you may choose to export your media in **Side by Side** format. However, this method requires specific playback devices for viewing.

Side by Side Method

In order to have a better stereo vision experience, then it is recommend that users employ the following prerequisites:

1. Side by side media (exported from **CrazyTalk**).
2. Specialized player (for creating alternating-frame sequencing or superimposed video).
3. Specialized display.
4. Filtering devices (for separately filtering images to the left and right eyes).

The interval time to playback the left and right images are rather short. The human brain takes the paired images and synchronizes them together in order to generate the feeling of depth.

For more details about players, displays and filter devices, please refer to the Environment for Viewing 3D Stereo Media section.

Viewing with Bare Eyes

Side by Side Method - Without Equipment

This method utilizes media that consists of a pair of side-by-side offset frames (for video) or images. You do not need any special device to view this media, you only need to adjust the focus of your binocular vision so that the images from both sides overlap with each other.

In order to overlap the paired frames, or images, and sense the depth of the media, you may employ your bare eyes with the **Parallel Viewing** technique.

Parallel Viewing Method

You may need to practice in order to learn how to use this viewing technique:

1. Look at any far away object that is beyond your display device.
2. You may then notice that the two actors may double and appear as four.

3. Then adjust your eyes so that the two actors, in the middle, overlap with each other. Eventually you will see the 3D actor pop-out in front of you.

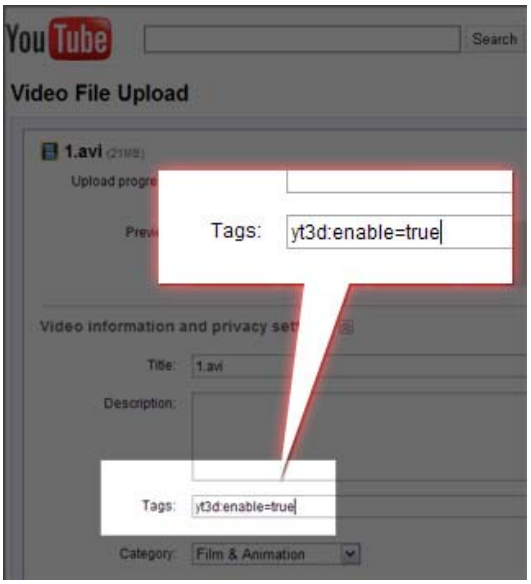
Viewing on YouTube

Uploading to YouTube

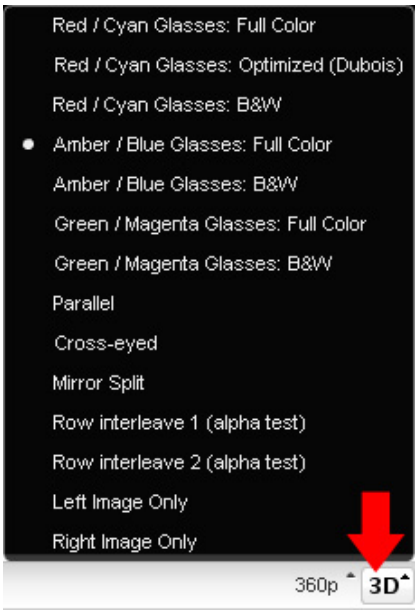
If your 3D stereo media is in **Anaglyph** format, then you may simply upload it to **YouTube** with any conventional method. If you would like to upload your 3D stereo media to **YouTube** in **Side-by-Side** 3D format, then follow the steps below:

1. Prepare your 3D stereo media.

2. Upload it to **YouTube**. In the **Tag** section, type in "**yt3d:enable=true**".



3. Visitors may use **YouTube** as a 3D player by selecting the media type in the drop-down list.



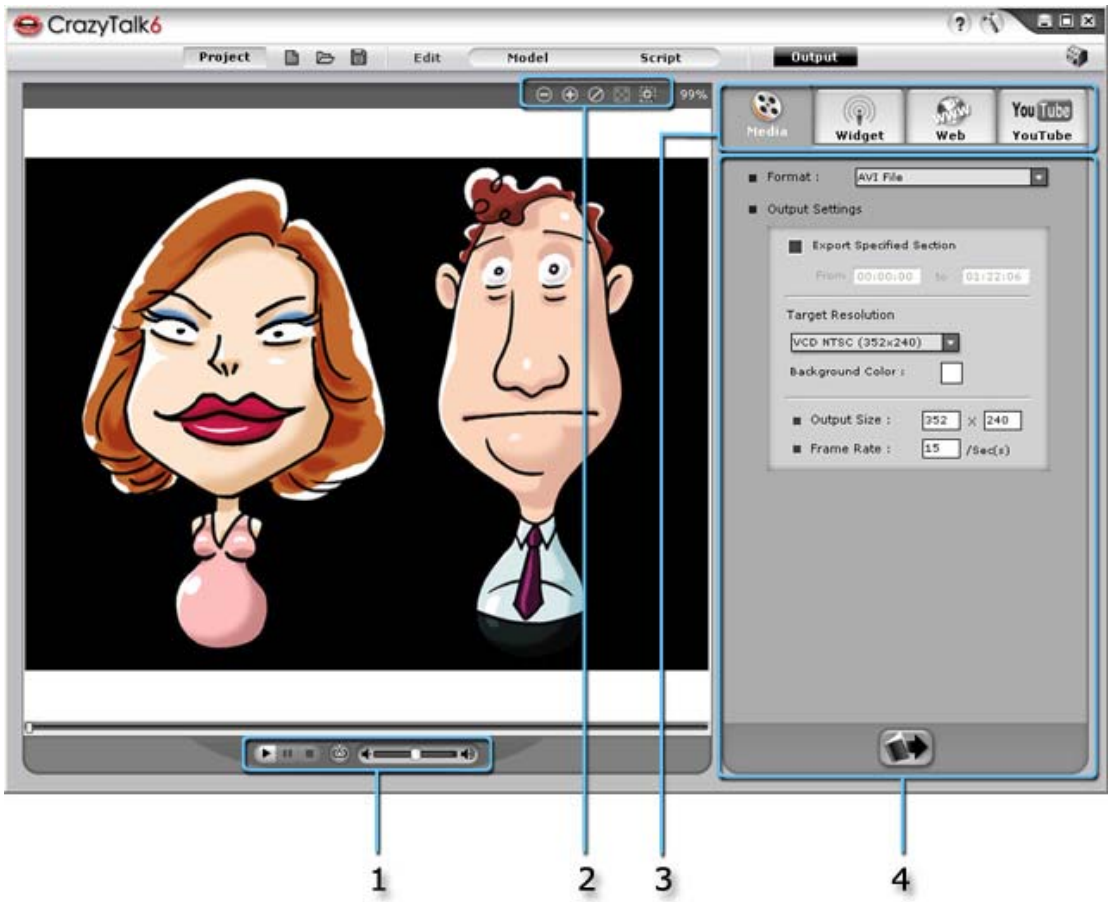
Note:

- If the 3D result is not correct, you may add "**yt3d:swap=true**"to fix the issue.
- If you choose any type other than two-color methods in step 3, then you must have specific display devices to perceive the correct 3D stereo effect.
- For more details on 3D stereo settings, please refer to the **YouTube** Getting Started: 3D Content page.

OUTPUT

Introducing the Output Page

CrazyTalk now offers the convenient feature of exporting your talking images to multimedia formats that are compatible with a wide range variety of devices. For instance, you can convert your talking message to an **AVI** file with **DVD** and **HD** quality, or for uploading to **YouTube**. You can convert it to sequenced image (BMP/TGA/PNG) files or a streaming RM (Real Media) file to broadcast on a web server. Exporting **Flash** files is also supported so you may output your talking model as a flash animation.



1. Playback Control	• : Playback script. • : Pause playback of script. • : Stop playback of script.

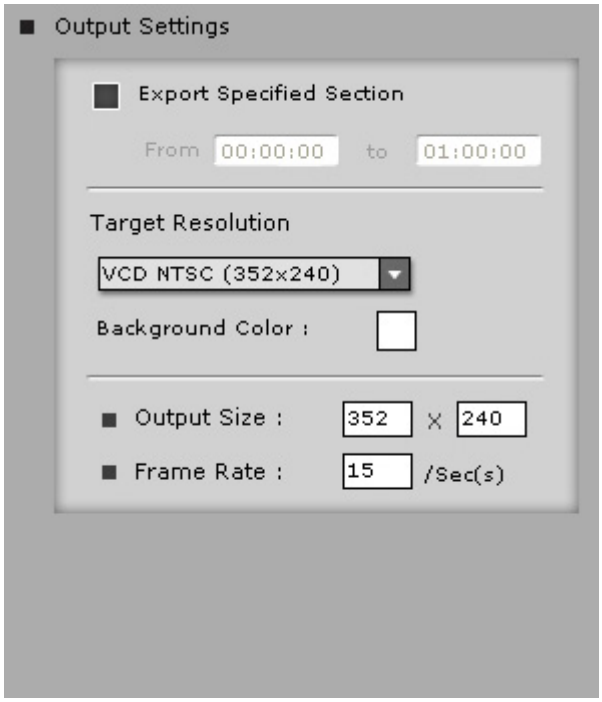
	• : Loop playback of script. • : Adjust volume.
2. Viewing Tools	• : Zoom In - Enlarge image to increase clarity. • : Zoom Out - Reduce magnification to increase the area of visibility. • : Fit to Window - Resize image to fit it in the viewport. • : Original Size - Display image at original size and magnification. • : Drag Zoom - Drag a marquee across the image and enlarge the selected area.
3. Mode Tabs	• : Output Video/Sequenced Images/Wave Files. • : Output Widget Files. • : Output Files for Web. • : Upload Files to YouTube.

4. Output Settings	• Provides tools for specifying the output media format, area for export, target resolution, custom output resolution, and frame rate for the exported media file.

Note:
o If you want to export into the WMV file format from **CrazyTalk**, you will need to first download and install WMVEncoder9 from the Microsoft website.

General Output Settings

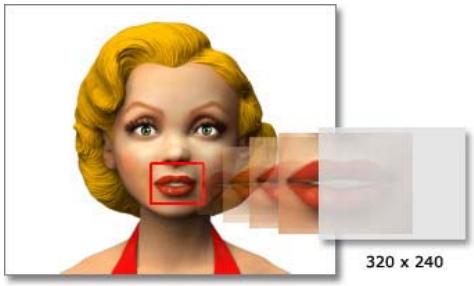
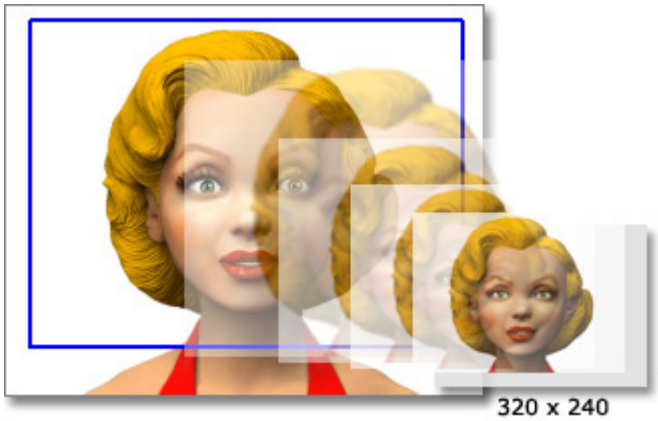
The general output settings for **Video**, **Image**, and **Web** are described in this section.



- Check the **Export Specified Section** option if you only want to export a specific part of the project.
- Check the **Target Resolution** option if you want to specify your own target resolution. Select the desired resolution from the drop-down box. You can select from **DVD** or **VCD** with **PAL/NTSC** formats as well as **HD** formats.
- Click the **Background Color** box to select the background color from the color palette.
- Specify your own desired resolution for the output frame by entering the height and width in pixels in the **Output Size** boxes.
- Enter the desired frame rate in frames per second in the **Frame Rate** box.

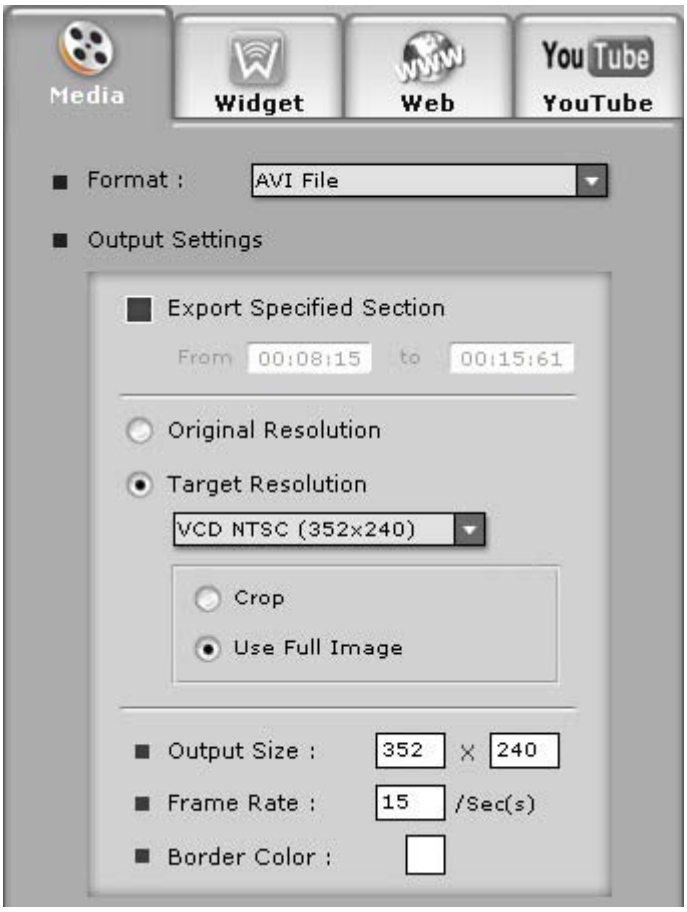
Cropping

The cropping feature provides you with a method to have a custom area on the image enlarged to fit into the desired output size. We will utilize 320 x 240 output size to describe the principle.

Cropping	Output Result
	320 x 240
The cropping box turns to red to indicate that the size for cropping is smaller than the output size.	The cropped image is expanded to fit into the desired output size.
	320 x 240
The cropping box turns to blue to indicate that the size for cropping is equal or greater than the output size.	The cropped image is shrunk to fit into the desired output size.

Output Media

In this panel, you may choose to export project as **Video**, **Sequence Images** or **Wav** files.



Please follow the steps to output video files.

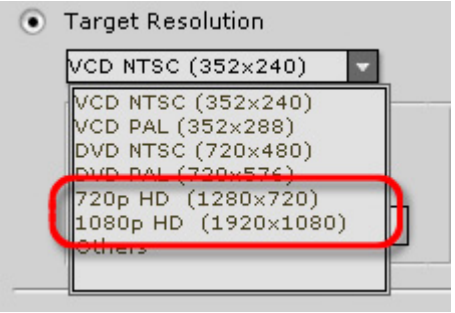
1. Click **Video**

tab to toggle the output mode.
2. Select the format in the **Format** drop down list.
3. Modify the Output Settings.
4. Click **Export** .

Setting for HD Video

You may output video files in **HD** format:

1. Select the **AVI Files** item in the **Format** drop down list.
2. Click the **Target Resolution** radio button, select **720p HD** or **1080p HD** in the drop down list.



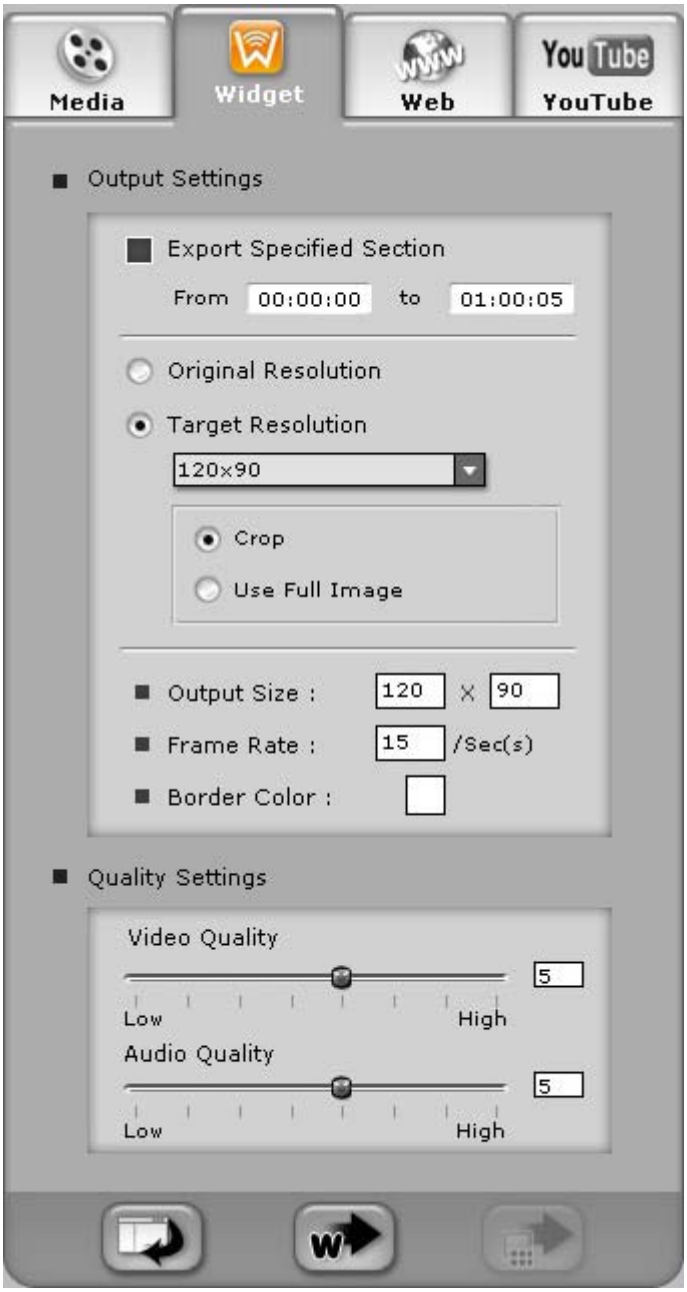
3. Adjust the other output settings. Click **Export** .

Output for 3D Stereo Media

If you want to output 3D stereo media, then please refer to the Creating 3D Stereo Projects in CrazyTalk section for more information.

Output for Widget

CrazyTalk offers you the feature to output **CrazyTalk** Projects as *.swf* videos. Please follow the steps below.



1. Click the **Widget**

tab to toggle the output mode.

2. Check **Export Specified Section** option if you only want to export a specific part of the project.

3. Modify the **Output Settings**.

4. Adjust the sliders to set the **Video** and **Audio** quality.

5. Click the **Launch Editor** button to import into the **Widget Editor**.

6. Click the **Export Widget File** button to export as an **iWidget** file.

7. Click the **Export Web Avatar** button to export as *.swf* video.

Note:

- The **Export Web Avatar** button will be disabled when the current project is not a Web Avatar project.
- To learn more about how to create an interactive head on the web, please visit creating custom web avatar.

Creating Custom Web Avatar File

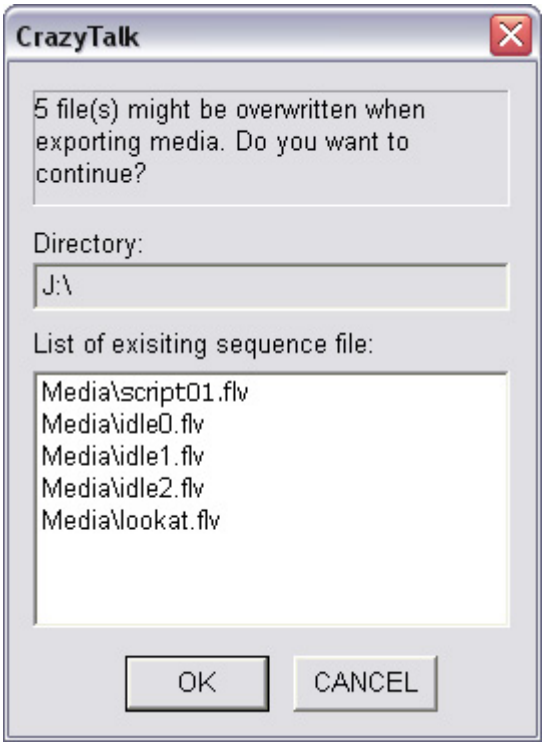
After you export a **Web Avatar** via the **Widget/Export Web Avatar** button with the **Web Avatar** project, you can see the result as follows in your browser. It is actually a player for playing flash files along with various events:

	Item	Event Triggered	File Played	File Location
A	Player	Idle Flash Played (default)	idle0.flv idle1.flv idle2.flv (Randomly Played)	(same folder as the html generated)\media\
B	Play Button	Button Clicked - Main Talking Script Played	script01.flv	(same folder as the html generated)\media\
C		Cursor Over the Avatar (Avatar looks at the cursor)	lookat.flv	(same folder as the html generated)\media\

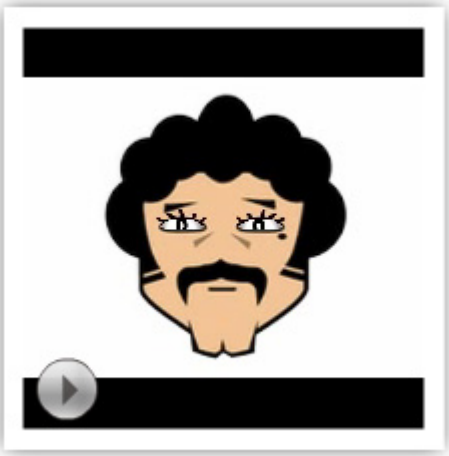
Custom Avatar

To generate your custom avatar with the same talking scripts, you may simply perform the steps below:

1. Go to the **Project** page and apply the **Web Avatar** template from the gallery.
2. Go to the **Model** page to create a CrazyTalk Model. Follow the wizard to complete the model-creating process.
3. Go to **the Output** page and switch to the **Widget** tab. Click the **Export iContent** button.
4. Click the **OK** button to replace the original flash videos with new videos of your custom avatar if you are prompted with a warning message.



Load the html page to view the result:

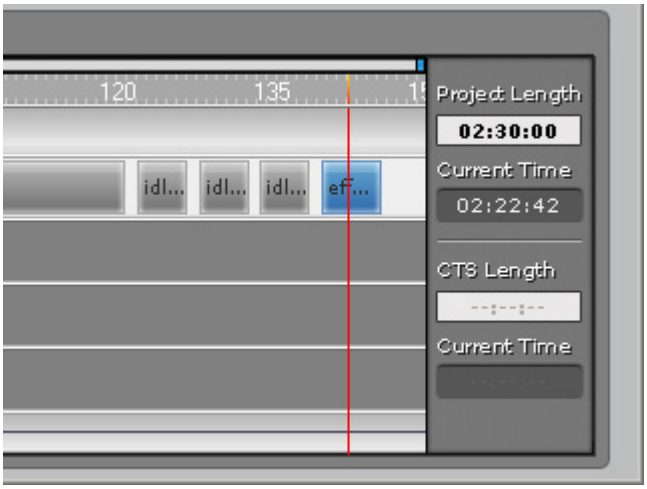


Custom Talking Script

If you want to playback a custom talking script when the **Play** button is clicked, you may perform two methods to achieve it:

A. Using Existing Web Avatar File

1. Apply the **Web Avatar** project on the **Project** page.
2. Go to the **Script** page and double-click the last talking script.



3. Replace the talking script with a new one (you may also need to adjust the length of the project).
4. Convert the new CTS length into an integer number:

If the **CTS Length** reads 02:03:45, the integer number will be (02x6000 + 0345 = 12345).

5. Open the ini file from the same folder where the web avatar file is located. Change the **FrameNo** from {14000 - 14600} to {14000 - X} in the [FLV_0005] section where X = 14000 + integer number calculated.

   In the example, it will be 14000 - 26345 (14000+12345)

6. Export the project via the **Widget** page.

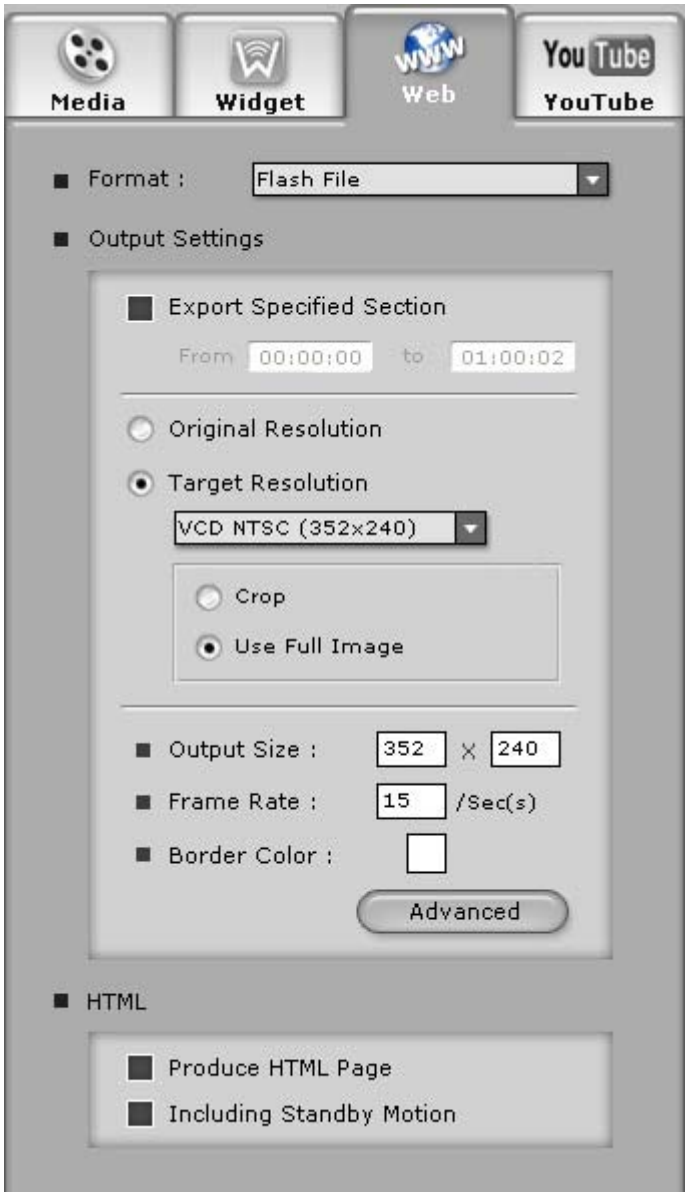
B. Using New Empty Project

You may also use an empty project to generate a talking script flash for playback.

1. Optionally save the same avatar as the web avatar into custom gallery.
2. Create a new project.
3. Apply the avatar you just saved in step 1.
4. In the **Stage** editor, add and edit talking scripts.
5. Go to the **Output** page, **Web** tab and use following settings:
   - **Target Resolution**: Use Full Image.
   - **Output Size**: 200 x 200.
   - **Frame Rate**: 30 / sec(s).
   - **Advanced Audio/Video**: High.
6. Click the **Export** button and replace script01.flv.

Output for Web

CrazyTalk offers you to output **Flash** , **RM,** or **WMV** files for web. Please follow the steps below.



Flash Files

You may output **Flash** files for the **Web**:

1. Select the **Flash Files** item in the **Format** drop down list.
2. Adjust the other output settings.
3. Click **Advanced**

button and drag the scroll bar to set the **Video** and **Audio** quality for the **Flash** file.

4. Check the boxes accordingly in the **HTML** section:

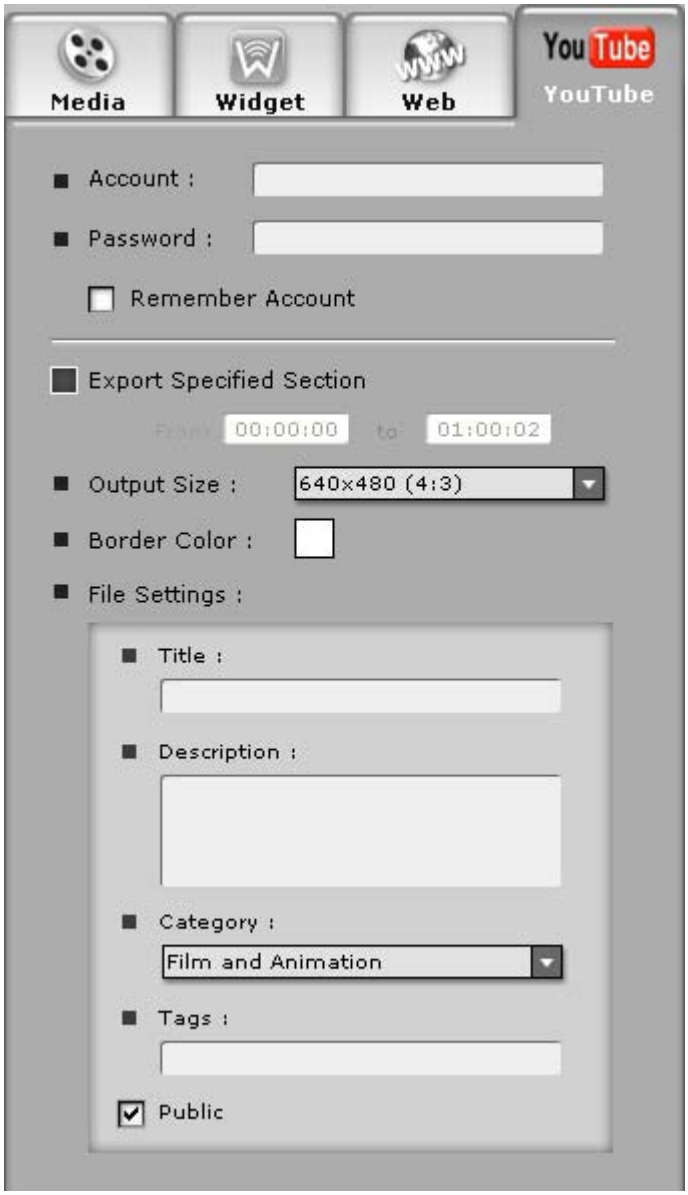
   - Check **Produce HTML Page** box to create a web page in which the video file embeds.

   - Check Including Standby Motion so the model contains standby motion for flash files (RM and WMV format do not support this feature).

5. Click **Export** .

Output for YouTube

CrazyTalk provides this feature so you may directly upload your project to **YouTube** instead of having to export files, waiting for rendering, browsing to the **YouTube** page and uploading the exported video files manually.



1. Click the **YouTube** tab to toggle the output mode.

2. Enter your data into all fields on this page (these fields cannot be empty in order to upload files).

- **CrazyTalk** uploads the video into your account with your account information.
- If you wish to enter more than one tag in the **Tags** field, please separate them with a space. Your visitors will quickly be directed to view videos related to the tags from your **YouTube** video page.

3. Check the **Export Specified Section** option if you only want to export a specific part of the project.
4. Specify the **Output Size** from the drop-down list.
5. Click the **Go to YouTube** button to open the **YouTube** webpage in your default browser. Click the **Upload** button to directly upload this project.

Preference Settings

Press the **Preference** button to open the Preference. The following dialog box is displayed:

- **Temporary Folder**: The Temporary Folder stores temporary files created by **CrazyTalk** during normal operation. You can define where temporary files are saved using the preferences pane.

- **Enable Undo**: Allows you to define the maximum number of undos. You can set the range between 5 to 99 times.

  This setting does not include the number of undoes in the **Image Processing** and **Mask Editing** dialogs.

- **Maximum Image Import Size**: This setting enables you to decide how many millions of pixels you want to support when importing an image. If the imported image is over your definition, it will be reduced to fit. If your computer is powerful and you want to edit a large image, you can select the highest setting.

- **Set Workspace Image Size**: This setting enables you to decide how many pixels you want to display on **CrazyTalk** while working. This setting will not affect the exported data. It will use the original image while exporting. If your computer has CPU resource concerns and you do not edit large sized images frequently, we suggest you to keep this setting low.

- **Show Getting Started when start-up**: Activate this checkbox if you want to display the **CrazyTalk6 Getting Started** dialog each time you launch **CrazyTalk**.

- **Show fitting wizard for importing image**: Activate this checkbox so the step-by-step fitting wizard is started after a new image is loaded.

Assets Location

The assets for **CrazyTalk** are stored in specific folders:

	Windows XP
Embedded Templates	C:\Program Files\Reallusion\CrazyTalk 6\Templates\CrazyTalk 6 Template\
Custom Templates	C:\Documents and Settings\All Users\Documents\Reallusion\Custom\CrazyTalk 6 Custom\
Shared Custom - Script and Expression	C:\Documents and Settings\All Users\Documents\Reallusion\Shared Custom\CrazyTalk 6 Custom\
	Windows Vista/Windows 7
Embedded Templates	C:\Program Files\Reallusion\CrazyTalk 6\Templates
Custom Templates	C:\Users\Public\Documents\Reallusion\Custom\CrazyTalk 6 Custom
Shared Custom - Script and Expression	C:\Users\Public\Documents\Reallusion\Shared Custom\CrazyTalk 6 Custom
	Windows Vista/Windows 7 (64 bits)
Embedded Templates	C:\Program Files (x86)\Reallusion\CrazyTalk 6\Templates
Custom Templates	C:\Users\Public\Documents\Reallusion\Custom\CrazyTalk 6 Custom
Shared Custom - Script and Expression	C:\Users\Public\Documents\Reallusion\Shared Custom\CrazyTalk 6 Custom

Keyboard Shortcuts

General

Keyboard Shortcut (Hotkey)	Function
ESC	Cancel.
Ctrl + Z	Undo.
Ctrl + Shift + Z	Redo.
Ctrl + S	Save Project.
Ctrl + O	Open Project.
+	Zoom in.
-	Zoom out.
/	Original size.
*	Fit to window.
F11	Full Screen On/Off.
F2	Rename (selected custom models/eyes/script/SFX/motion clip).

Model Page

Keyboard Shortcut (Hotkey)	Function
Ctrl + Clicking on target points	Select multiple control points in **Basic**/**Detailed Facial Mode**.

Space	Play/Stop.
Ctrl + Shift + S	Add current model(s) to custom gallery.
Ctrl + M	Toggle **Face Orientation** panel (profile setting).
B	Switch Paint / Erase tool in **Background Mask Editing** panel.

Script Page – Edit

Keyboard Shortcut (Hotkey)	Function
Ctrl + X	Cut.
Ctrl + C	Copy.
Ctrl + V	Paste.
Del	Delete.

Script Page - Advanced Timeline Editing

Keyboard Shortcut (Hotkey)	Function
Ctrl + Shift + S	Add selected script to custom gallery.
Ctrl + Shift + S	Add motion clip to custom gallery. (must mark one part on the motion script track first)
Ctrl + Drag motion clip right edge	Change motion clip speed.
Drag script/motion clip right edge	Loop script/motion clip.

Ctrl + "+"	Zoom in (stage/timeline Editor).
Ctrl + "-"	Zoom out (stage/timeline Editor).
Ctrl + "/"	Zoom all (stage/timeline Editor).
Space	Play/Stop.
Ctrl + E	Toggle Camera Editor.
Ctrl + K (Pro only)	Toggle Key Editor.
Ctrl + P	Toggle Puppeteering Panel.
1, 2, 3, 4, 5	Change puppet profile during recording.
Q, W, E, R, T, Y	Change full face control mode during recording.
F10	Click the Record button in Puppeteering Panel.
F12	Click the Preview button in Puppeteering Panel.

Puppeteering Panel

Keyboard Shortcut (Hotkey)	Function
Ctrl + P	Toggle Puppeteering Panel.
1, 2, 3, 4, 5	Change puppet profile during recording.
Q, W, E, R, T, Y	Change full face control mode during recording.
F10	Click the Record button in Puppeteering Panel.
F12	Click the Preview button in Puppeteering Panel.

Advanced Function

Keyboard Shortcut (Hotkey)	Function
Ctrl +	Save the **Project** with the **model** stored in **JPEG** format to decrease the project size.
Ctrl +	Save the **model** in **JPEG** format to decrease the file size.