

# Bonnie Rig v1.0 For Maya 2011+

## Documentation

### Contents

1. Setting Up the File
2. The Picker
3. Hidden Controls
4. Hair Dynamics
5. Rendering
6. Known Limitations
7. User Agreement
8. Credits and Special Thanks



# 1. Setting Up the File

## Folder Structure

Bonnie's Maya project folder is set up like most. The Maya scene files are in the **scenes** folder, the textures are in the **source images** folder, and the picker background is in the **images** folder. The rest of the folders are empty. If you need to use Bonnie in a separate project folder, simply copy over the contents of the three aforementioned folders into their respective counterparts in the new project folder.

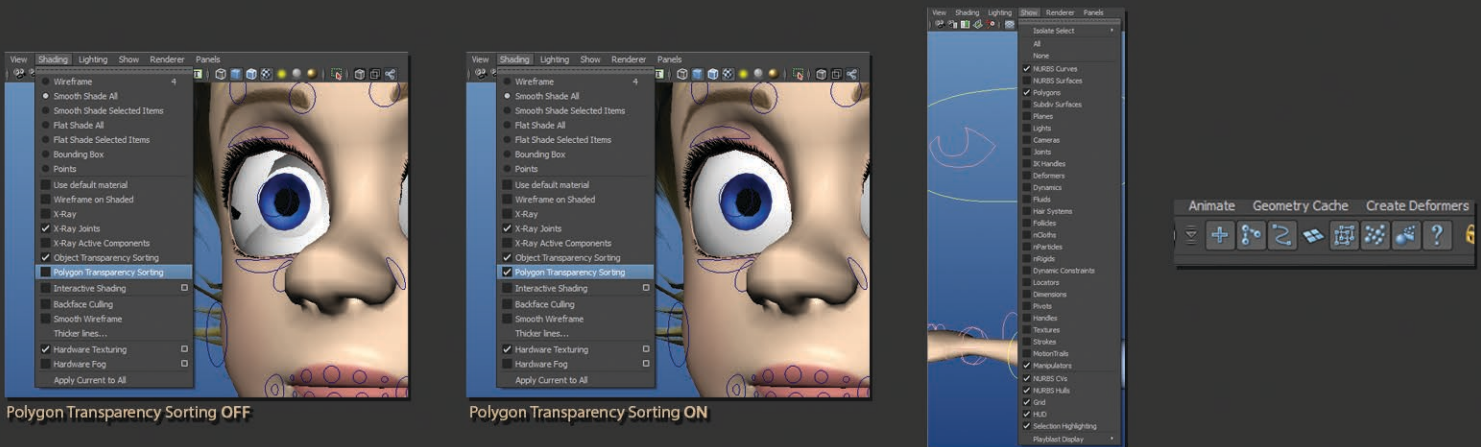
The scenes folder contains three files. They are named **BONNIE**, **BONNIE\_occlusion**, and **bonniePicker**. The first is the main rig. The second is a duplicate rig with shaders and world set to imitate an occlusion pass (detailed instructions on the **Render** page). The third is the file for the control picker (detailed instructions on the **The Picker** page).

## Setting the Project, Displaying Textures and Hiding Unnecessary Components

Bonnie's textures will not load properly if the Maya project folder is not set. To set the project, go to **File>Set Project**. Now navigate to the folder that contains **scenes**, **source images**, etc. and select it. As is the case with the project folder your download contained, the name of the folder is **BONNIE**. Bonnie's textures should show up when you open files containing **BONNIE.mb** after this point.

Once the project is set and you've opened either **BONNIE.mb** or any file containing it or referencing it, there are a few steps you must take to ensure that the textures display correctly. First, make sure you are in textured mode by pressing **6** on your keyboard. Also check the **Polygon Transparency Sorting** option under **Shading**, to eliminate strange alpha popping in the hair and eyes.

It's also suggested to only display nurbs curves and polygons and to disable geometry selection when working with Bonnie, to avoid accidentally selecting anything under the hood. Bonnie is comprised exclusively of polygons and curves.



## Referencing

Bonnie is intended to be used as a reference file. In fact, the picker will only work when she is used as a reference. A reference is a file that exists outside of your current Maya scene and is referenced in. Anything you change within the new file will not affect the referenced file. You can update the referenced file and it will update in the scene files it is referenced into.

To reference Bonnie into a Maya scene file, click **File>Create Reference** and select **BONNIE.mb**. You may now utilize the rig however you like within the new file without worrying about changing the original rig file.

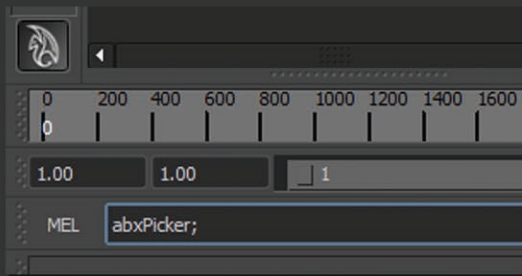


## 2. The Picker

### Installing abxPicker

Bonnie's control UI was created using abxPicker, a freeware download hosted at Creative Crash. To use the UI, the base abxPicker script must be installed, which only takes a few minutes. You can download it at [www.creativecrash.com/downloads/abxpicker](http://www.creativecrash.com/downloads/abxpicker).

If you're familiar with the Malcolm rig's UI, you probably already have abxPicker installed. If not, the instructions are pretty straight forward. Simply copy and paste the **abxPicker** file into the scripts directory of your computer. For me, that is located under **Documents>maya>2012-x64>scripts**. Now restart Maya. Now whenever you type **abxPicker** into the MEL line at the bottom of the Maya interface, the picker will launch. You can also create a shelf button for easy access by selecting that simple text and middle-dragging it onto the shelf.



### Launching Bonnie's Picker

To get Bonnie's picker up and running, first make sure you are within a file that is referencing **BONNIE.mb** (covered on the **Setting Up the File** page). Now go to **File>Import** and select **bonniePicker.mb**. Whenever you launch abxPicker within this file (which should contain an imported **bonniePicker.mb** and referenced **BONNIE.mb**), the Bonnie picker should launch. If it doesn't contain a background image, you might be missing the **background.jpg** file in the images folder. Note: The referenced file must remain titled as **bonniePicker.mb** in order to cork with the UI correctly.

### Using the Picker

Bonnie's picker contains a few types of buttons. There are normal colored selectors, gray selectors for batch selections, and labeled gray selectors for specific functions.

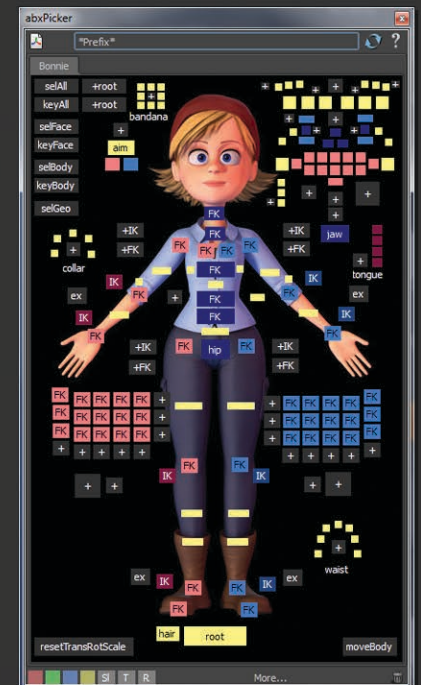
The colored buttons act just as any object in Maya would, with shift and control adding or subtracting, respectfully.

The gray buttons marked with a + sign represent batch selections, such as rows of finger joints.

The buttons in the top-left are for selecting all of Bonnie's controls, just the face controls, just the body, etc. There are also options for keying them.

The **resetTransRotScale** button resets the translate, rotate and scale values for the selected objects.

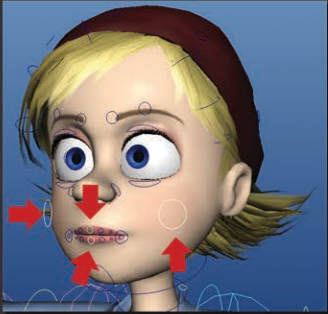
The **moveBody** button selects the controls necessary to translate Bonnie's body around the 3-D space.



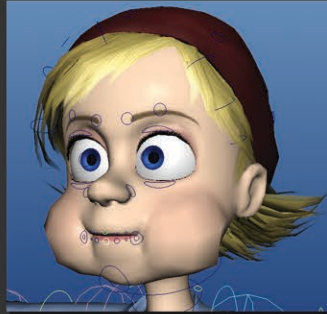
# 3. Hidden Controls

## Puff and Roll Controls

There are puff blend shapes built-in to a few of Bonnie's facial controls. The **Puff** option lives in the channel box as a custom attribute on the cheek and central lip controls. They are as follows. The two lip controls also have a **Roll** option.



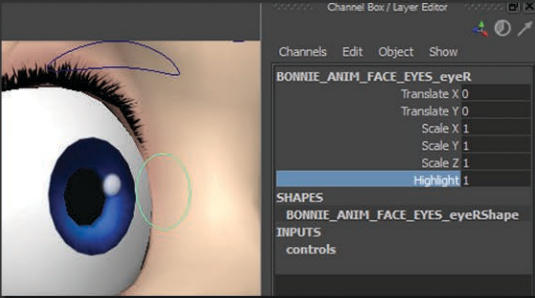
Puff at 0



Puff at 1

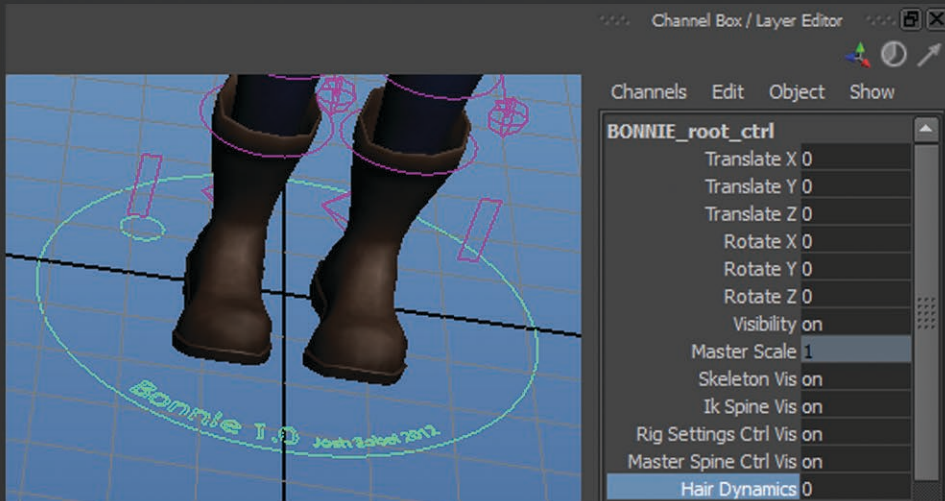
## Highlight Toggles

The on-eye controls contain toggles for the eye highlights.



## Hair Dynamics Control

The root controller contains an attribute that switches between Bonnie's joint-driven hair and her dynamic hair. The dynamic hair is where most of the time was put into, so I'd suggest using that over the manual hair controls. More on hair dynamics is covered on the **Hair Dynamics** page.

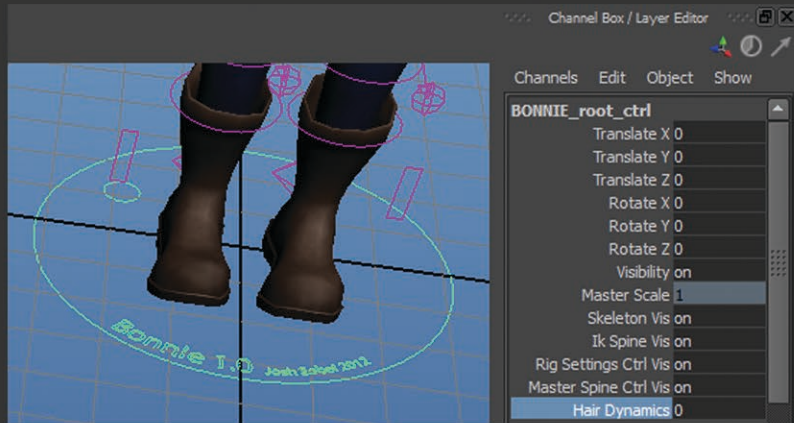




## 4. Hair Dynamics

### Hair Dynamics Control

The root controller contains an attribute that switches between Bonnie's joint-driven hair and her dynamic hair. The dynamic hair is where most of the time was put into, so I'd suggest using that over the manual hair controls.



### While Animating

The manually controlled hair and the dynamic hair do not work together. It's one or the other. However, when animating Bonnie, always make sure you are in manual mode. Dynamic simulation should be saved until you are 100% done with animation. At this point, switch to dynamic mode to prepare for the simulation.

### Caching the Simulation

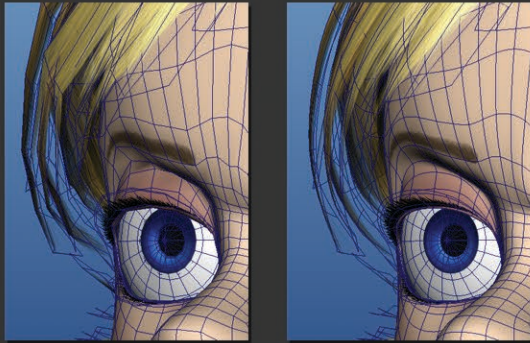
To cache the hair system and create files that Maya can read for simulated hair animation, you first have to select the hair system. This is done by selecting the small nurbs circle resting inside the root controller. Once selected, switch to the **Hair** tab on the shelf and select **Create Cache**.

That's pretty much it. The simulation should now be recorded and you should be able to scroll through the time slider, send the folder to a render farm, etc. If you are new to dynamics, I'd advise going through some in-depth tutorials in order to successfully troubleshoot.

## 5. Rendering

### Smoothing

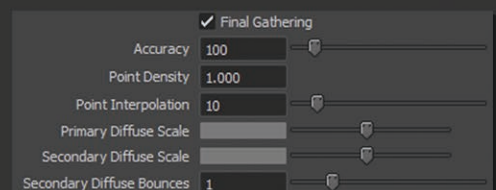
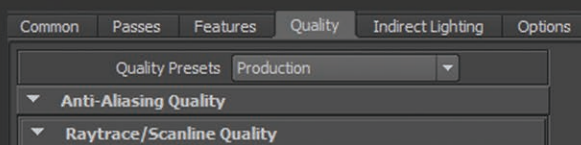
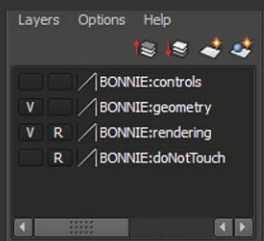
There is no traditional smooth function built into the rig. I've been pretty spoiled by the smooth preview function, and have even used it on render farms successfully. You can enable it by pressing **3** on your keyboard with geometry selected. Pressing **1** goes back to unsmoothed.



### Bonnie's Preset

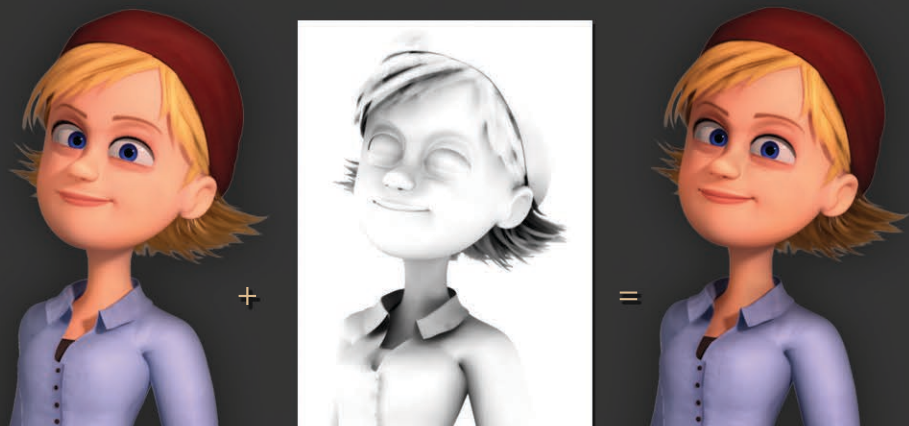
A system is set up throughout Bonnie's files enabling quick setup for renders. Turning the rendering layer on from **BONNIE.mb** reveals a sphere for final gather, as well as a black plane, which can be used for a simple background. The alpha of Bonnie's hair refuses to work with a transparent background in Mental Ray, so make sure there is always some sort of geometry behind her when you render.

To make sure the render works correctly, go into render settings and set the Mental Ray preset under the **Quality** tab to **Production**. Now go to the **Indirect Lighting** tab and enable final gather, and drag the two value sliders to a mid-gray area. You should also set **Secondary Diffuse Bounces** to at least 1. Rendering a smoothed Bonnie with these settings should give a nice result, visible in the images at the bottom of the page.



### Occlusion

The **BONNIE\_occlusion.mb** file is meant to be swapped with the reference of **BONNIE.mb** for a separate batch render to apply on top of a normal render with a multiply setting and a low opacity. It's not real occlusion, since I couldn't get the alpha of the hair to work with occlusion correctly. It consists of a white sphere and custom shaders. It's a cheap fix, but I think it works. To swap the reference, go to File>Reference Editor and change the file destination name from **BONNIE.mb** to **BONNIE\_occlusion.mb**.





## 6. Known Limitations

### Deformation Limits

Most of these should be fairly obvious, such as opening the jaw too far or making her smile too wide. Use discretion.



Yup.



Nope!

### Rear Bandana Control Has Buggy Weighting

It leaves behind the outer-most points.

### No Global Scale

Bonnie does not have a global scale feature. She was originally built to a specific scale for a project, and contains dynamic features that could conflict with a global scale feature. If you need to use her in conjunction with props and/or other rigs, those will need to be scaled down to fit her scale.

Note: If someone wants to dive in and create a fully-functional global scale feature, you are welcome to send me the file and I will replace the hosted download with the updated version.

# 7. User Agreement

It's a free rig. You can do what you want with it, but use discretion please. Keep it PG-13. Don't redistribute it on your own websites or the like. If you use it, it's nice if you give me credit. Thanks!



# 8. Credits and Special Thanks

## Software Used

Autodesk *Maya 2011* and *2012*

Adobe *Photoshop*

Supercrumbly's *abAutoRig2*

J. Adam Burke's *abxPicker*

David Johnson's *djRivet*

## Character Rig By

Josh Sobel

## Additional Rig Troubleshooting By

Leon Sooi

## Textures By

Alexis List

Josh Sobel

## Normal Maps By

Justin McMillin

Ryan Davies

## Character Design By

Josh Sobel

## Costume Design By

Lane Ngo

Tracy MacLauchlan

Kaitlyn Ritter

Caitlin Geels

Josh Sobel

## Special Thanks

Jason Maurer

Wen Seun

Ashwin Inamdar

Brian Schindler

Jose Silva

Scott Wright