

*Greenbriar Studio*

Rigged Character Import  
and  
Product  
Development Tools  
for Cinema 4D

**Cinema 4D Plugins**

CR2 Loader 1.1

GMI Import / Export

Export Morphs

Tag Morph / Morph Mixer and Animation Loader

Greenbriar Morph to Object

Object to Greenbriar Morph

Conformer

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# Greenbriar Studio Cinema 4D Tools

## Contents

Tools Overview and Summary .....	3
Install and Use - License Key - Step by Step .....	4
First Run with CR2 Loader .....	5
CR2 Loader Reference .....	7
What the CR2 Loader Plugin does NOT do .....	11
GMI Import / Export for Cinema 4D .....	12
Tag Morphs and Animation Loader System .....	14
Tag Morph to Objects Utilities .....	18
Export Morphs to Poser .....	19
Conformer .....	23



Mandi by Dark Whisper



Alexis by Angielyn

# Greenbriar Studio Cinema 4D Tools

## Tools Overview and Summary

The Greenbriar Studio tool set has been designed to accomplish three goals: to enable Cinema 4D users access to the most sophisticated character animation figures available to the general market, to facilitate the construction of new Poser products by commercial developers and to simplify the process of creating realistic animations with sound.

Figures designed for the Poser market come in up to 75K polygon meshes, some with over 3,000 preinstalled body and animation morphs, with complete skeletons and with multi surface discontinuous uv texture mapping. In other words, everything that is needed for high end character animation work. However, accessing these features has been very difficult. Tools available to date have only been able to load single .obj file mesh shells, leaving out morphs and skeletons and requiring re-texturing. All these features are now available through our tool set.

Our tools also provide a way to share rigged models between different applications. We will be adding more applications to this inexpensive system as fast as possible.

**Here is a summary of our tools and their use.**

### **CR2 Loader**

This plugin creates a welded single mesh with no normal problems. Keeps all Poser named parts and surfaces. Imports ALL morphs. Can join multi part morphs into body level morphs. Imports all material colors, texture, trans and bump maps and settings, applying them correctly for Cinema 4D. When CR2 loader finds a texture map in use, settings are made for mode, Projection, setting the created UV Map and loading the image. Imports the Poser skeleton and joint positions. Correctly parents all bones and then 'fixes' and enables them. Loads multiple figures from a file and will also load props, each as a separate object. Loads external props, props with morphs and inline geometry props. Loads Poser PZ3, PZZ, CR2, CRZ, HR2, HRZ, PP2, PPZ files. Creates a plain or shaded set of weight maps as a start on weight map creation. It also scales, moves, rotates and parents props and secondary figures that were in the CR2 file.

### **GMI Loader / Exporter**

Designed to allow the interchange of fully rigged models between high and low end apps. Work in the system of your choice and move your model to the format of your client. This first release supports geometry with discontinuous UVs, bones and bone/vertex weighting, unlimited vertex based morphs and materials with texture mapping for all channels. Available for PC and Mac. Allows transport between apps and platforms. Creates zlib compressed model files to reduce space. (12M text to 2.6M compressed.)

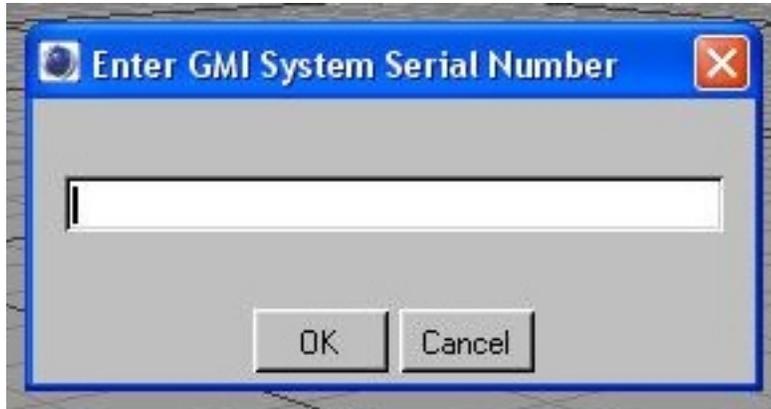
# Greenbriar Studio Cinema 4D Tools

## Install and Use - License Key - Step by Step

### Installation of plugins - for all plugins

You should place any of our zip plugin files in the Cinema 4D Plugins directory. Unzip it and you will see one or more new folders containing your new tools. Installation is complete.

The first time you run a plugin requiring a License key it will ask you for your key.



Type in, or cut and paste, the License key string you received with the plugins. Upper and lower case letters and the dashes are important. Hit OK and a License file will be created for you. It will be in C:\Program Files on the PC or in the C4D main folder on the Mac.

If you hit OK without entering a key, a blank file will have been created and then next time you run the plugin it will say invalid License key. Just search for GS\_CR2\* (PC users note - not \*.\*). Remove this file and then run the plugin again. If it doesn't see a License file it will ask you to enter the Key.

Important Note - Some of our plugins (CR2 Loader and Import GMI) are import plugins. You will not see these listed anywhere except preferences, where they will come up blank. Import plugins are not listed in the interface, instead they are accessed by selecting File/Open and opening a file with the extension that these plugins recognize. You will then see our options interface. If the license has not yet been installed, you will be asked for it here and after entering it, go on to the options screen.

# Greenbriar Studio Cinema 4D Tools

## First Run with CR2 Loader

After installing the plugin and entering the key into CR2 Loader, try a test CR2 load. Open a Poser file, a single character .cr2 is recommended for a first test. These will be found under the Poser runtime/libraries/character/ and then an assortment of directories from different sources. The file must end in .cr2. Since this is the first time, when the settings panel comes up you will need to select the Poser executable (so it knows how to resolve the Poser partial paths) and a work directory. This work directory is only used to store temp files of inline morphs to speed up processing. Since this is the first run, also select Save Settings or your paths will not be saved. Select this anytime you wish to change the default settings. It remembers all button selections and the file paths. Now hit OK. How long it takes depends on the model, the version 1 and 2 Mill figures take about 30-45 seconds, Victoria three can take more than 5 minutes.

Note - To select the work directory you must select a FILE in the work directory. This is a limitation of the current plugin system, hopefully it will be corrected soon.

After the program has loaded the base geometry and morphs, you may see a pop up window asking you to find the first texture map, if the model you chose uses any (not for new Poser 5 files - they contain full texture map paths, so these load fully automatically, unless the texture map is missing). Hit the button to browse and find the texture map requested. Then hit OK. If all the maps are together in one place, you will not be asked to locate another. Most texture maps are located in runtime/textures. You are asked to locate the first map since the pre-Poser 5 CR2 does not contain full texture file paths and also so you can optionally copy these over to your Cinema 4D project directory before loading and then your C4D objects can be set to reference these local copies of the maps. This makes C4D much happier!

If you have a problem with textures not loading, move them all to the your C4D project directory, along with a copy of the .cr2 file and re-run. This takes care of the problem. C4D does not like the textures to be scattered in several directories.

You should now have a figure, and if you click on the object in Object View, you should have a set of weight maps for each body part, a uv texture map, a set of bones and a set of morph objects, also surface and body part selection tags. You can open the material editor and see the different surfaces that were created and textured.

## Poser Standard Character Warning

Some of the standard characters that come with Poser have no outside geometry file reference to an object file. Instead they have something like:

```
figureResFile GetStringRes(1052,42)
```

figureResFile is normally followed by the obj file path such as:

```
figureResFile :Runtime:Geometries:Poser 4 Lo:Blendlobusman.obj
```

Curious Labs has declined to make this information available, so we can not load these files at this time. (We just recieved this information from another developer and should have it in soon!)

# Greenbriar Studio Cinema 4D Tools

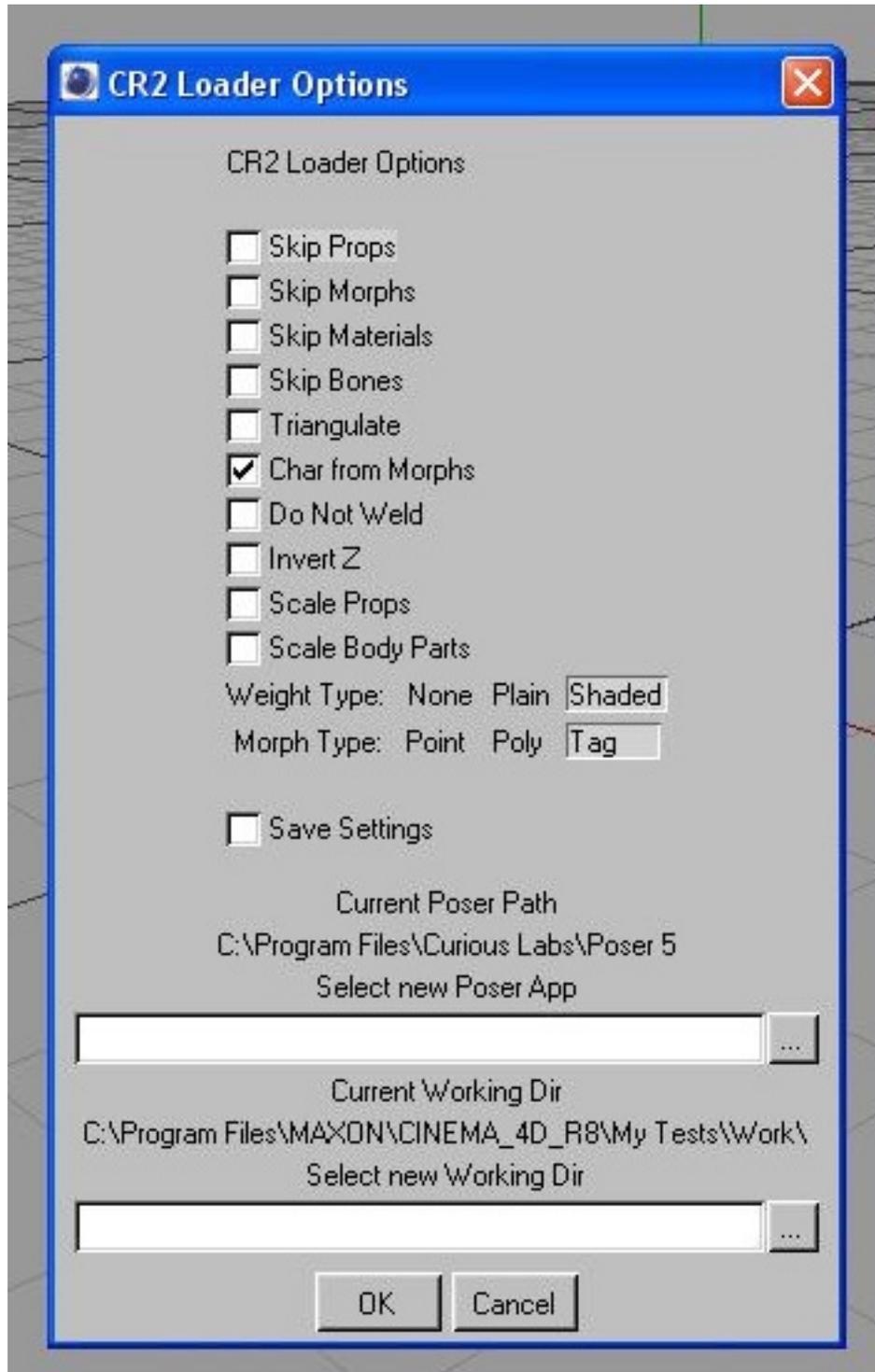


Glamorous Vickie, by Jim Burton, based on Victoria 3, loaded into Lightwave. The clothes were loaded as separate props and retextured in Modeler with some of Jim's textures, since they use only reflection maps in Poser. Only the hair had to be realigned in Layout. Vickie 3 supports up to 2,500 morphs.

# Greenbriar Studio Cinema 4D Tools

## CR2 Loader Reference

CR2 Loader imports characters from Poser CR2 format files. It imports the base mesh, all morphs, all materials and the skeleton. It can load multiple figures and props from a CR2 file, creating each as a separate object in Cinema 4D.



# Greenbriar Studio Cinema 4D Tools

To start a load - select File/Open and browse to locate the input PZ3, PZZ, CR2, CRZ, HR2, HRZ, PP2 or PPZ file (Scene, Character, Hair or Prop).

Cur Poser Path – This locates the directory that is the base for the references in the Poser files. Hit the button and browse to locate the Poser application.

Current Working Dir - This locates a directory where temp files for props will be written, so they won't appear in all of your project files. The temp names are reused, so they will not accumulate.

These are the only required fields, for your first runs just select a CR2 file and you can leave the other settings at default.

## Optional Settings

Skip Props – Ignore props in the CR2 file (Button ignored if loading a PP2 or HR2 file - duh!). This is used to disable prop loading for files where the props will not correctly load from the CR2. This allows you to load the figure from the CR2 and then load the props from their PP2 or HR2 files.

Skip Morphs – Do not load any morphs from the file.

Skip Materials – Do not load any textures from the file.

Skip Bones - Do not load the bones or weight maps from the file.

Triangulate Mesh - To prevent non-planar faces during animation, you can now optionally convert all polygons to triangles during load. Does not affect point count or order. In the C4D version, all polygons over 4 points are always automatically triangulated

Create Char from Morphs - This is a function that allows you to 'spin the dials' in Poser and create a new character and when you import it into C4D, all the creation morphs will be applied to the base mesh instead of being loaded as morphs. This helps reduce the number of morphs to a C4D manageable level. It functions by applying, at the dial setting, any non-zero morphs and loading all morphs set to zero to use for animation. You can also flag morphs that are just to be dropped and not imported. A more efficient way to create characters in Poser for Cinema 4D! (To flag a morph to be dropped, set the morph to -.001 and save as a new figure. then load that .cr2 or .pz3 file.) Uses body level Poser dial settings as well as part level settings when merging character morphs.

Do Not Weld Parts – leaves all the duplicate points between parts that are used by Poser. Must be selected if you are going to make Poser morph targets to maintain point count and order.

Invert Z – invert the Z values to orient the model in C4D the same as in Poser. Must be selected if you are going to make Poser morph targets or your targets will appear backwards in Poser.

Scale Props - Apply the scale info from the .cr2 file to props. In some cases this helps fit props and in some makes them worse, depending on how the parts and .cr2 were created. So it is available as a user option.

# Greenbriar Studio Cinema 4D Tools

**Scale Body Parts** - Apply the body part scale info to the C4D bones. Poser scales individual body parts. Most systems, including C4D, will scale all the children of a bone when you scale the bone. When this option is selected, the scale info will be applied to each bone, and reversed from each child of the bone to get as close as possible to the Poser result. Results will vary. Scaling is a little odd in Poser and does not translate perfectly. But if the figure has been heavily scaled, you will need to use this option to apply the scale and then adjust by manually scaling bones where necessary. Correct by scaling bones!

**Weight Map Type** - Creates two types of default weight maps for each bone. The plain map consists of all points in the corresponding body part set to 1.0 all others 0. All weight maps are named to match the bones. The shaded set uses the Poser joint parameters to create a weight map set that blends across joint areas. Since the point sets are the same for all characters based on the same mesh, these sets can be tweaked, saved and then re-used for different characters. This function provides a starter weight map set that will still need finishing at the joints. (New, better auto weight maps coming with the next release for both C4D and LW.)

## **Encountering Loading Problems with CR2 Load**

There are many quality levels of files out there made by many large and small shops. Some are much better than others. They have been created many different ways. If you find files that you can't load, both let us know about it and try loading only the figure if it is a figure with props. Then load the props from the individual prop files. There are many models that we have not yet been able to test. Let us know about problems.



Glamorous Vickie by Jim Burton, posed with Load Obj as Morph.

# Greenbriar Studio Cinema 4D Tools

## Variations with Props and Poses

Depending on how props are created, when CR2 Loader tries to scale and place them, there will be varying degrees of difference from the Poser placement. Many props have to be hand adjusted before the character is finished. While Loader gets the correct and exact geometry, it can not always be very exact due to the different way that C4D and Poser handles scaling and figure joints. Loader tries to get as much of the hard work done as possible, and we keep working to get it closer, but it will never be perfect. You will find some items that load perfectly and some that load way off. It depends on how they were constructed and posed onto the figure. Poses are the same situation. As our ability to apply poses from Poser improves we may offer tools to load poses from any Poser pose file type.



Ziza by Thorne - After loading I scaled out the top a bit and scaled in the hair so you could see her ears.

# Greenbriar Studio Cinema 4D Tools

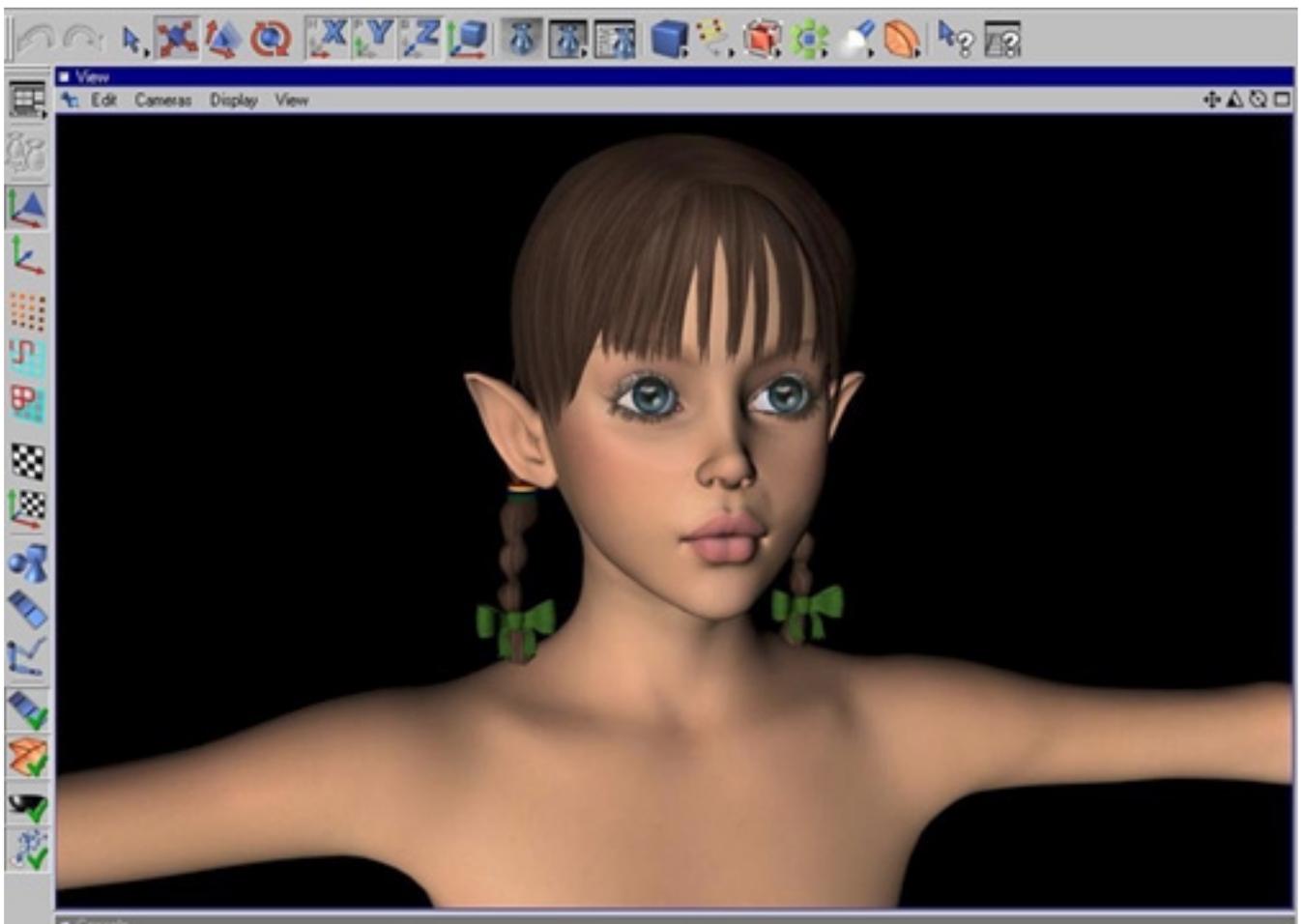
## What the CR2 Loader Plugin does NOT do

In order to avoid any confusion or misunderstanding, we list in this section the capabilities that we would like to add to our tool set, but are not yet available. Check our website for updates on new available features.

The current version of our plug ins do NOT create a completed weight map set. We currently create two versions, a plain set - all points of the body part assigned 100% to the matching bone and a shaded set - using the Poser joint parameters to create a weight map set that blends across joint areas. The releases of the 1.4 versions will be attempting to improve this weight map set, to help minimize the work required to get a fully functioning weight map set for animation. At the moment, joints still have to be edited in your app or with our Shade Weights tool. Since the CR2 Loader plugin does create a weight map set, the characters are animatable as is, but the joints need to be much smoother.

The CR2 Loader does NOT currently apply Poser pose type files. We import rigged characters, but not pose and pose animation data. We now have a separate product, Animation Loader, that reads all Poser pose and animation files, Mimic files and .bvh files.

We do NOT yet read Poser 5 cloth and hair. We can read anything else from Poser 5 including all compressed files.



Cayenne by Thorne

# Greenbriar Studio Cinema 4D Tools

## GMI Import / Export for Cinema 4D



The Greenbriar Model Interchange file(.gmi) is really just a practical and inexpensive method to exchange models between platforms and apps. It uses a zlib compressed file format, to keep them small and so they are readable on any platform. The two choices for doing export systems are 1) write a custom export (and import) for each system to every other system you wish to communicate with. For only five systems that's 25 sets of code, expensive to make, expensive to buy. The other choice 2) is to write a single package that talks to a common format. Five systems require 5 sets of code. The use of a file means issues of 'right version on this app to talk to right version of that app on that platform - and oops it doesn't connect to OSX' are no longer issues. The goal is an inexpensive system that can move fully rigged models from platform to platform, not just mesh shells.

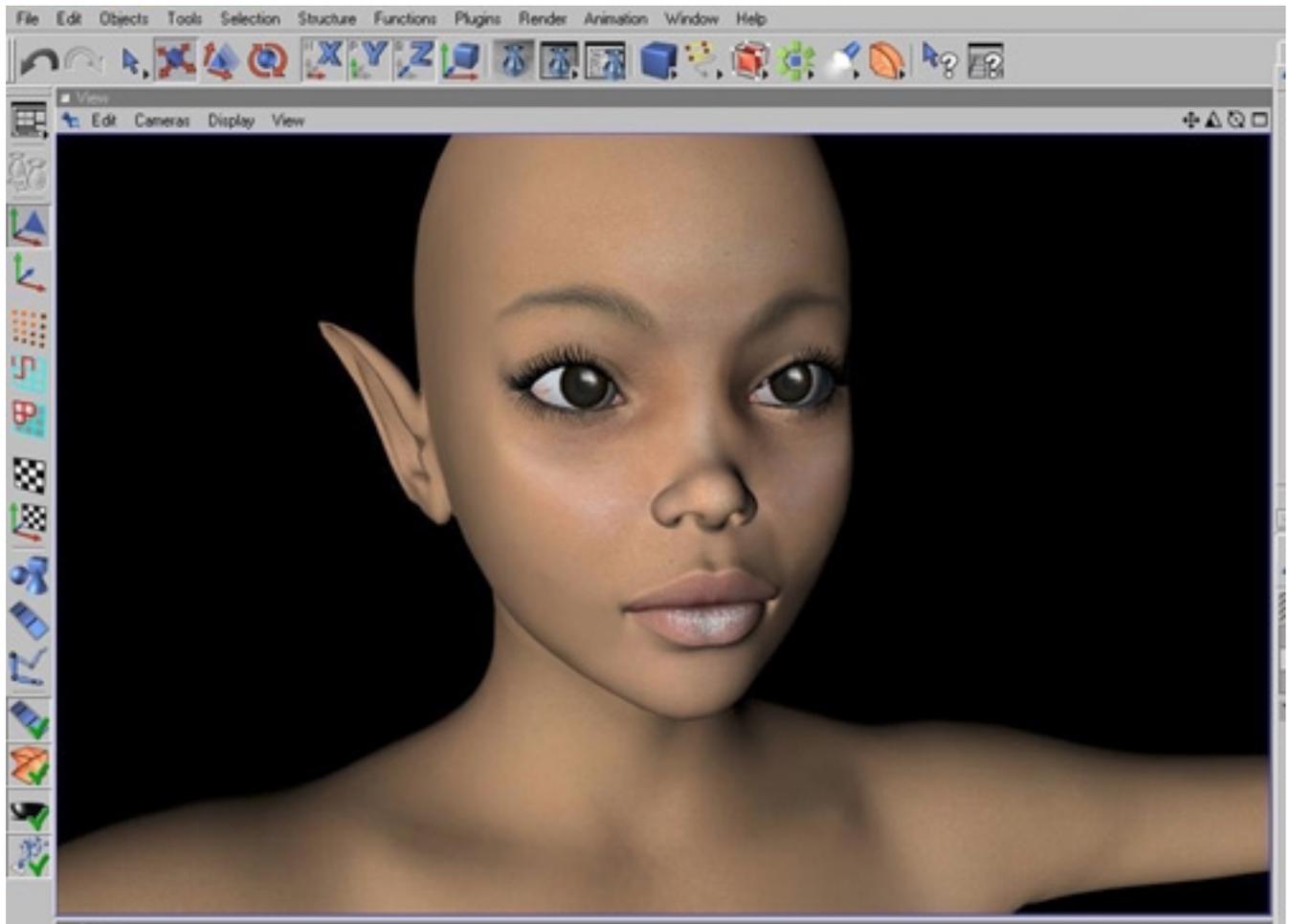
So we designed a system to allow the interchange of fully rigged models between high and low end

# Greenbriar Studio Cinema 4D Tools

apps. Work in the system of your choice and move your model to the format of your client. This first release supports geometry with discontinuous UVs, bones and bone/vertex weighting, unlimited vertex based morphs and materials with texture mapping for all channels. Available for PC and Mac. Allows transport between apps and platforms. Creates zlib compressed model files to reduce space. (12M text to 2.6M compressed.)

Options include the ability to limit reading and writing the morph, bone weights and materials sections, depending on how much of the model you wish to read or write. And Flip the Z axis to invert the model on load.

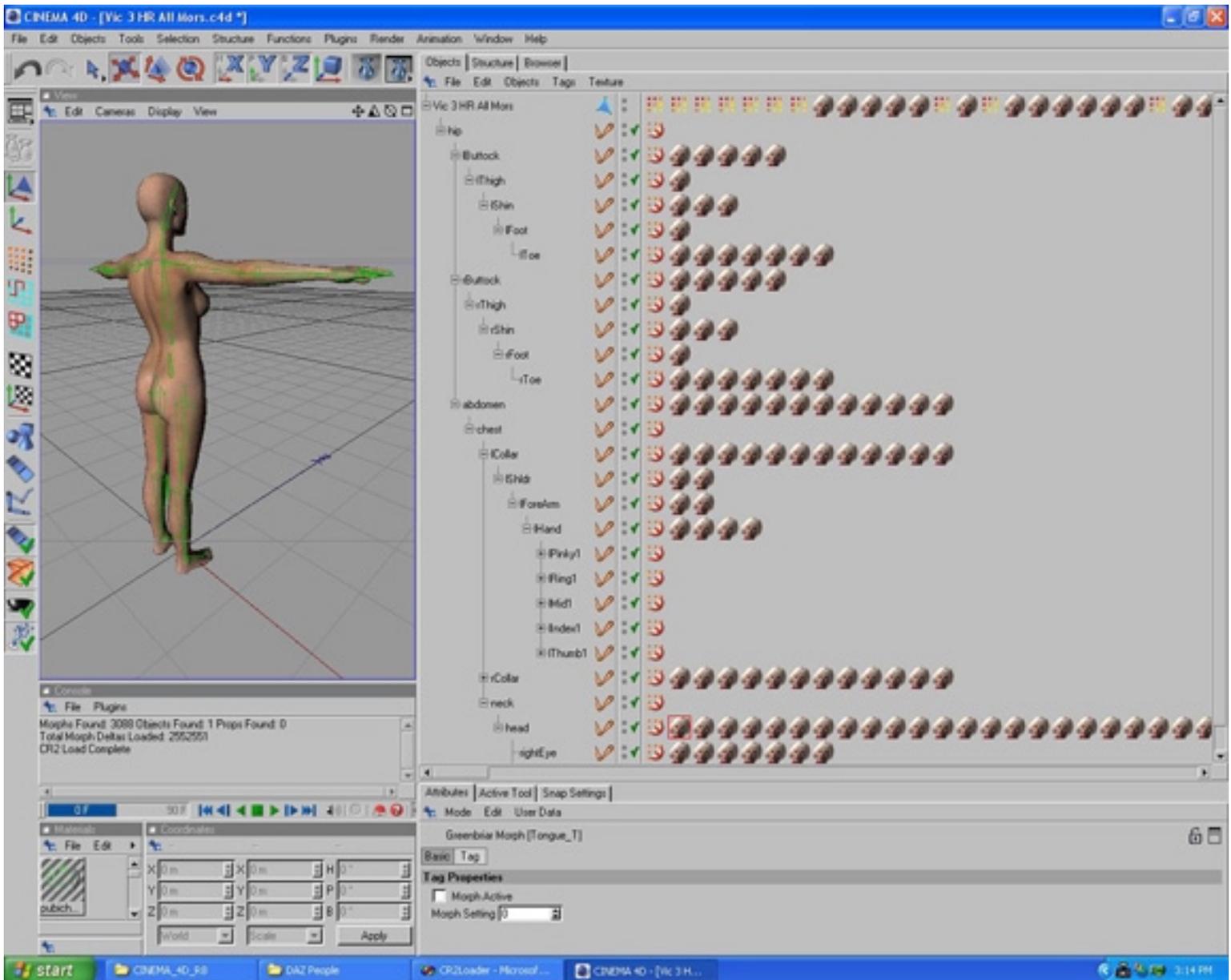
C4D version note - Morph import is to child polygon objects so you can examine them. Watch for our upcoming Morph system for C4D to better handle the huge morph sets of some models.



Alexis - Imported from Lightwave to Cinema 4D - rendered with default Render View in Basic C4D.

# Greenbriar Studio Cinema 4D Tools

## Tag Morphs and Animation Loader System



Victoria 3 loaded into Cinema 4D with 3,088 morphs using Greenbriar compressed morphs. Each head symbol is a loaded morph, the ones on the top row are body level morphs where all the separate part morphs have been combined into a single morph (optional).

## Using morphs from CR2 Loader and the GMI importer

Both CR2 Loader and the GMI importer will create morphs if defined in the input files. The GMI importer currently creates full polygon objects with tags making them invisible. Three options for creating morphs are available with CR2 Loader - the same full polygonal models, point only models to save space and the new Greenbriar compressed tag morph. Both the full polygon and the point only morph are compatible with the Mocca morph mixer. The morphs need to be the children of the

# Greenbriar Studio Cinema 4D Tools

morphmixer and the base mesh the reference. The problem that you will encounter is that there are simply too many morphs for the Mocca mixer!

Since they are polygon objects (even the point only objects) they have a tremendous impact on the responsiveness of the user interface. And they take up too much space. The 3,088 standard morphs with Victoria 3 from DAZ takes 6.2 G to load as full polygon morphs and 2.8 G as point only morphs. The only way to load Vickie 3 is with no morphs! And with only 125 morphs loaded, my interface starts taking 30 seconds to redraw after each posing of a bone!

We realized early in the development of the CR2 Loader that this would make a major feature of these models unuseable. So we have developed a new professional level morph system. It is based on very compact storage. The first release of our morph system includes a new morph object, commands to create a new morph from a polygon object and to create a polygon object from a morph, so you can easily develop/modify morphs in the editor or application of your choosing. It also includes a morphmixer.

And to make it even more fun, we have built in our complete Animation Loader system into the morph mixer! And with the cooperation and assistance of DAZ productions, the morphmixer also supports MIMIC input to automate lip-syncing via the morphs on these hi-res models.

Our CR2 Loader is fully integrated with the Morph Tag system. If you select Morph Tag in the CR2 Loader, it checks to see if the new morph type is installed on your system. If not, it defaults to the full polygon morph. If it finds it, it loads the morphs as tags attached to the appropriate bone or the figure itself for body level morphs. This helps keep the clutter down a bit, and is helpful later for exporting morphs. CR2 Loader also automatically creates and assigns a morphmixer object to each boned figure, so when your model comes up, it is ready to run. Click on a MorphMixer object and your model will auto load the morph settings that were in the file and the model will become the character you downloaded automatically.

The two advantages of our new system (and why we did it) are:

Huge memory use reduction. We load the 3,088 Vickie 3 morphs in 40.8 M of space. Less than 1% (.66%) of the space required for full polygon morphs and less than 2% (1.45%) of the space required for point object morphs.

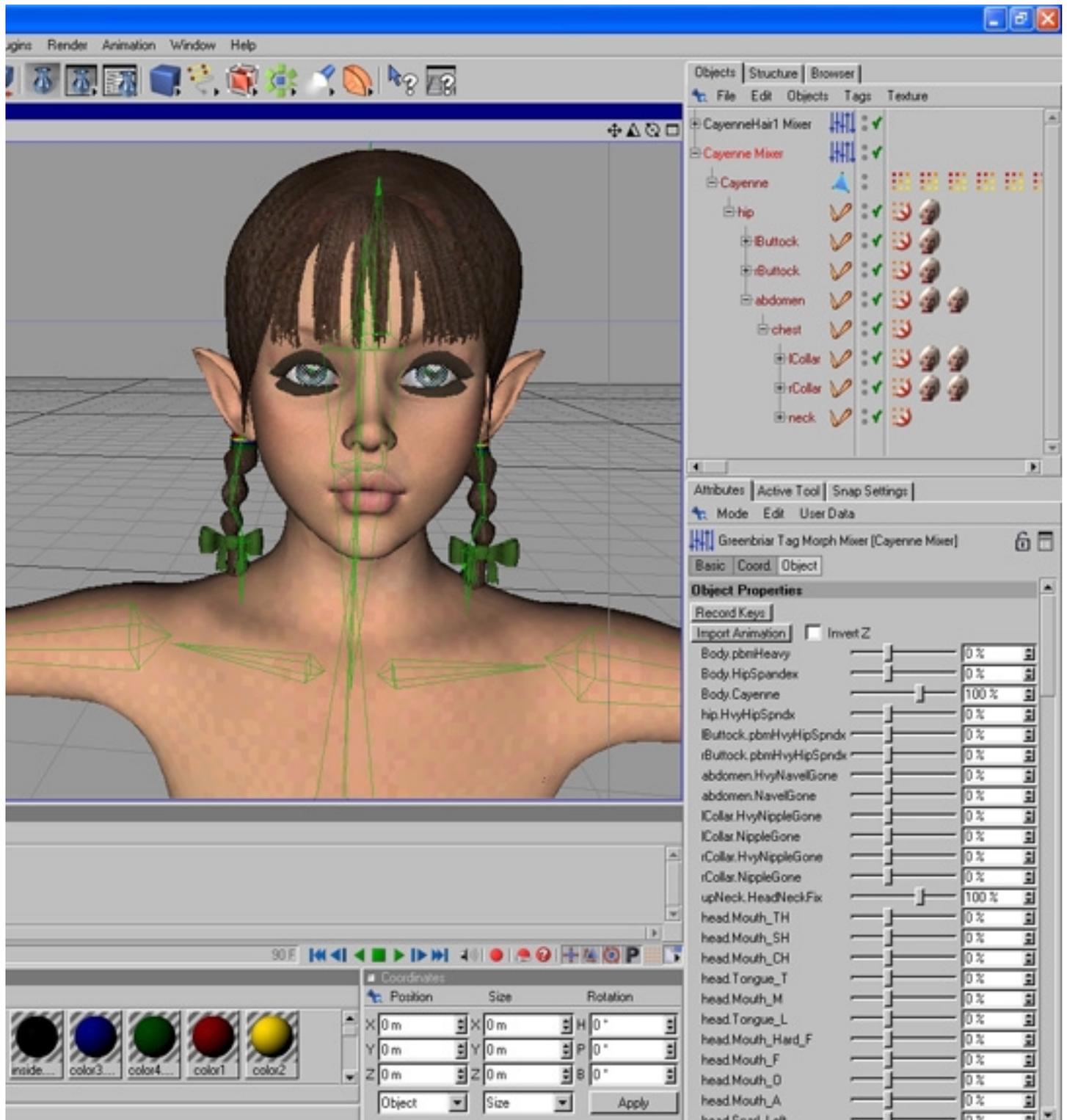
No impact to the user interface! Since the data is stored in tags away from the objects, it has no impact on interface response. No slowing down your workstation just because there is a pile of morphs tagging along (pun intended).

Well, actually there are three main advantages - the third will be the ability to import MIMIC, Poser pose and animation and .bvh data directly to your model for animation!

There are two control buttons on the Morph Mixer interface, each creates animation keys on your model. The first, 'Record Keys', creates a key, at the current time, for each morph with a NON\_ZERO setting. (Otherwise you would get hundreds keys all value zero.) Values allowed are -1 to 2 in .001 increments. (Note - when loading from a file, such as a Mimic file, zero values ARE set, since they are used to create the starting time for a morph to ramp.)

# Greenbriar Studio Cinema 4D Tools

The other button is very powerful. Rather than have a pile of buttons (I did actually for awhile, but took them all off) this one button, 'Import Animation' automatically connects to loaders for different types of files. By the file extension, it will load many different file types (and gives us the ability to add more later).



Model loaded with CR2 Loader using the Tag Morph option. Morphs appear as tags on bones and the figure and Morph Mixers are automatically installed. Morphs come up set to the values from the input file. Simple yet Powerful!

# Greenbriar Studio Cinema 4D Tools

Import Animation can read Poser pose and animation, Mimic and Poser .bvh files and apply them to your figures. It reads single and multiframe keyed poses/animations from .pz2, .p2z, .hd2, .hdz, .fc2, .fcz, .cr2, .crz, .pz3 and .pzz Poser files. It also reads frame by frame animations from the two types of .bvh files that Poser can generate. It can read any .bvh file, but it also contains special code to map the special Poser bone names to your figures skeleton and create keys there, rather than creating the skeleton defined in the .bvh file. So the motion is automatically applied to the figure.

Import Animation use is simple - select a Morph Mixer object that has a figure attached to it, check the Invert Z box if you used this to load the model and hit the Import Animation button. Select an input file of a type it can read and hit OK. Loading an animation is very fast, usually a couple of seconds. (If you have created your own model, use the Invert Z if your model faces towards you by default in C4D - faces negative Z axis.) The tool will also load into non Z flipped models, but be aware that all the poses and animations will be backwards (mirror image) to what you saw in Poser. But we were very careful to make sure that the tool could reverse all of the animation types and correctly load them on non-Inverted Z figures .

And Import Animation also imports, with all morphs and movements, the output pose files from the DAZ Mimic lip-syncing tool!

A big advantage of Cinema 4D when it comes to loading animations, it that it stores the original position of all the joints of the model. So unlike our other Animation Loader, in C4D we can load on top of a figure in any position, and you can drop a pose on top of an already posed figure with no problem. This is because Import Animation can automatically 'zero' the figure for you before it loads (getting the bones into their default start position is required to correctly calculate the animation and pose). Your figure will end up facing its default direction, so if it was rotated before you loaded on to it, it will have to be repositioned.

## **Limitations to Import Animation**

The only limitation is with .cr2 and .pz3 files. In this first release it only reads the first figure from multi figure files. So if you want to import a scene with several animated figures, save each figure to a pose file and then load from there. The other files are all single figure file types and are read completely with ver 1.0. If you load from a multifigure file, the poses/animations will be applied over each other. Might be interesting, but probably not what you want.

# Greenbriar Studio Cinema 4D Tools

## Tag Morph to Objects Utilities

When you look in the MorphTag folder under Plugins, in addition to the Greenbriar Tag Morph Mixer, which adds a new unassigned Mixer to the scene, you will see two utility programs - 'Greenbriar Morph to Object' and 'Object to Greenbriar Morph'. These two plugins are part of the Tag Morph package and are designed to make it as easy to use the Tag Morphs as a regular object morph (without all the wasted space).

These tools simply create a full polygon model from a tag morph or create a new Tag Morph from an existing polygon model.

### How they work

**Morph Tag to Object** - Select a Tag Morph in the Object Manager and then select Greenbriar Morph to Object from the Plugin menu. If the tag is valid it will create a polygon object as a child under your main object. Its name will be the same as the Tag Morph if the Tag Morph was attached to the main figure, or bonename.morphname, if the tag was attached to a bone of the main figure.

A valid tag is a Morph Tag that is attached to a polygon figure, or is attached to a bone of a polygon figure. It will report errors if this is not the case.

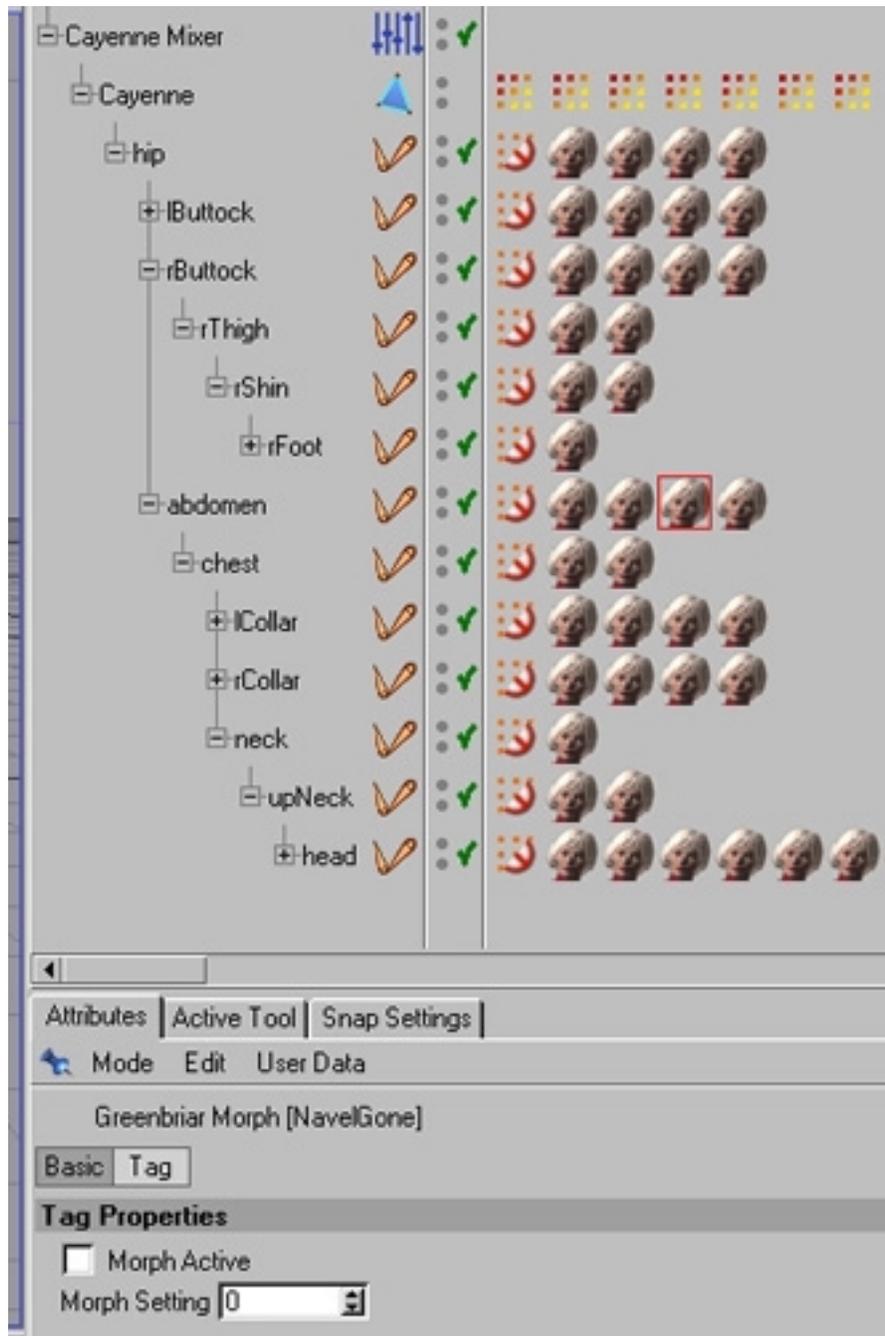
**Object to Morph Tag** - Select a polygon object in the Object Manager and then select Object to Greenbriar Morph from the Plugin menu. If the polygon selection is valid, a new Tag Morph will be created. If the name of your polygon morph object is validbonename.morphname, the new tag will be attached to that bone and named morphname. If not, the tag will be attached to the main figure and have the same name as the morph object.

A valid polygon morph object is one that is a direct child (nothing in between) of the main figure and it must have the same number of points as the main figure. It will report errors if this is not the case.

# Greenbriar Studio Cinema 4D Tools

## Export Morphs to Poser

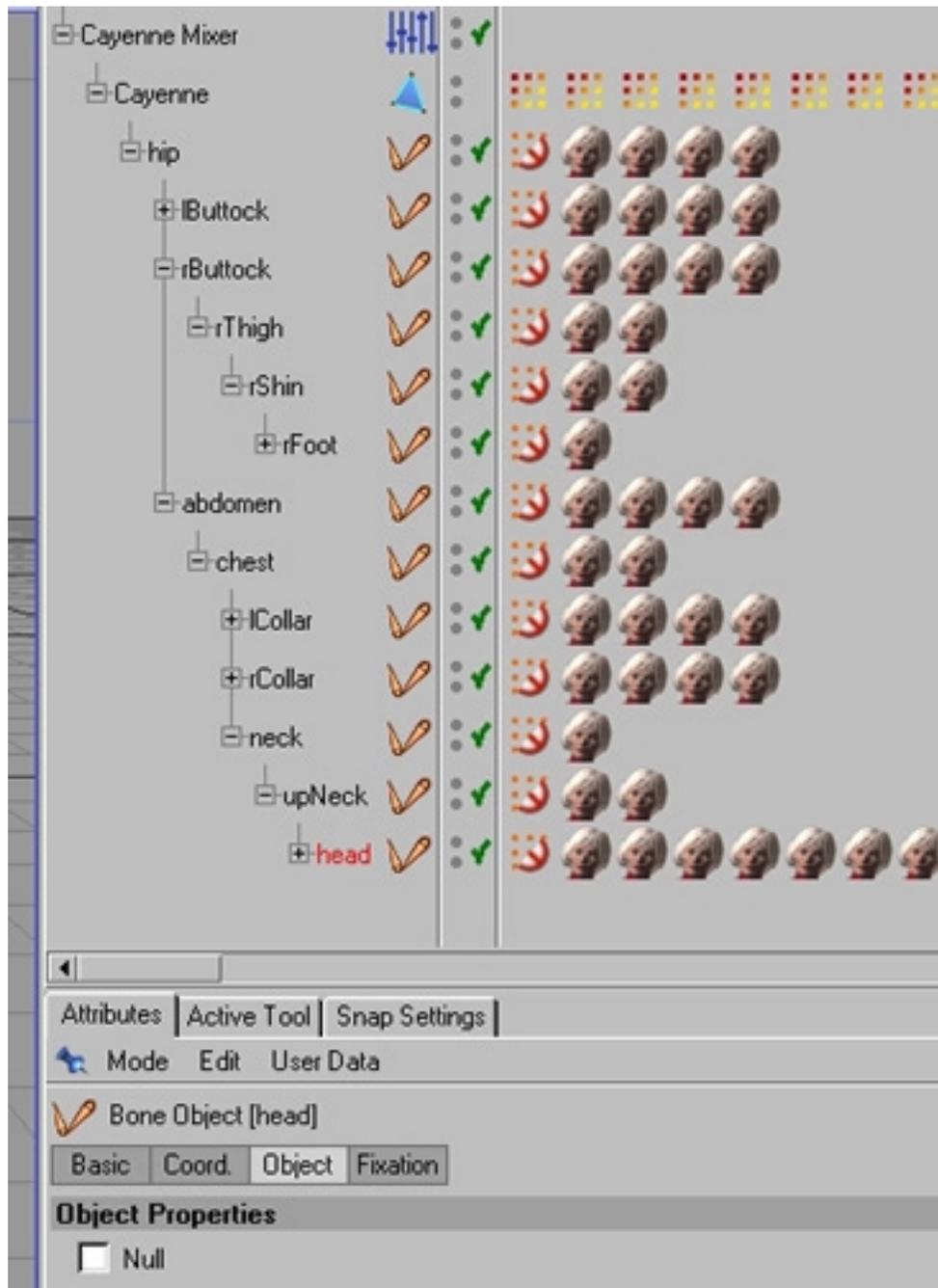
Export Morphs is a utility designed to export new morphs to Poser readable and distributable ‘squeezed’ morph files. ‘Squeezed’ morph files consist only of the point definitions, and as such can not be loaded as geometry. These are the generally acceptable (and copyright infringement avoiding) method to distribute morphs to be used with someone else’s mesh. Previously, you had to spend a lot of careful time with a text editor cleaning up the .obj morph files. These files are readable by Poser 4, ProPack and Poser 5.



A Morph Tag selected in the Object Manager.

# Greenbriar Studio Cinema 4D Tools

The Export Morphs utility is simple to use, yet powerful. It combines several of our previous morph utilities into one tool. This tool is designed to be used with either our Morph Tag system (necessary for loading models with lots of morphs into Cinema 4D) or the Mocca style Polygon Object style of morphs. It is coded to work with both. It has four main modes of operation. All modes are invoked by selecting an item in the object manager, and then running 'Export Morph to .OBJ' which will be either in the Plugins menu, or in a Greenbriar Utilities folder in the Plugins menu, depending on how many of our tools you have installed. The different modes are called by what type of object is selected.



A Bone selected in the Object Manager.

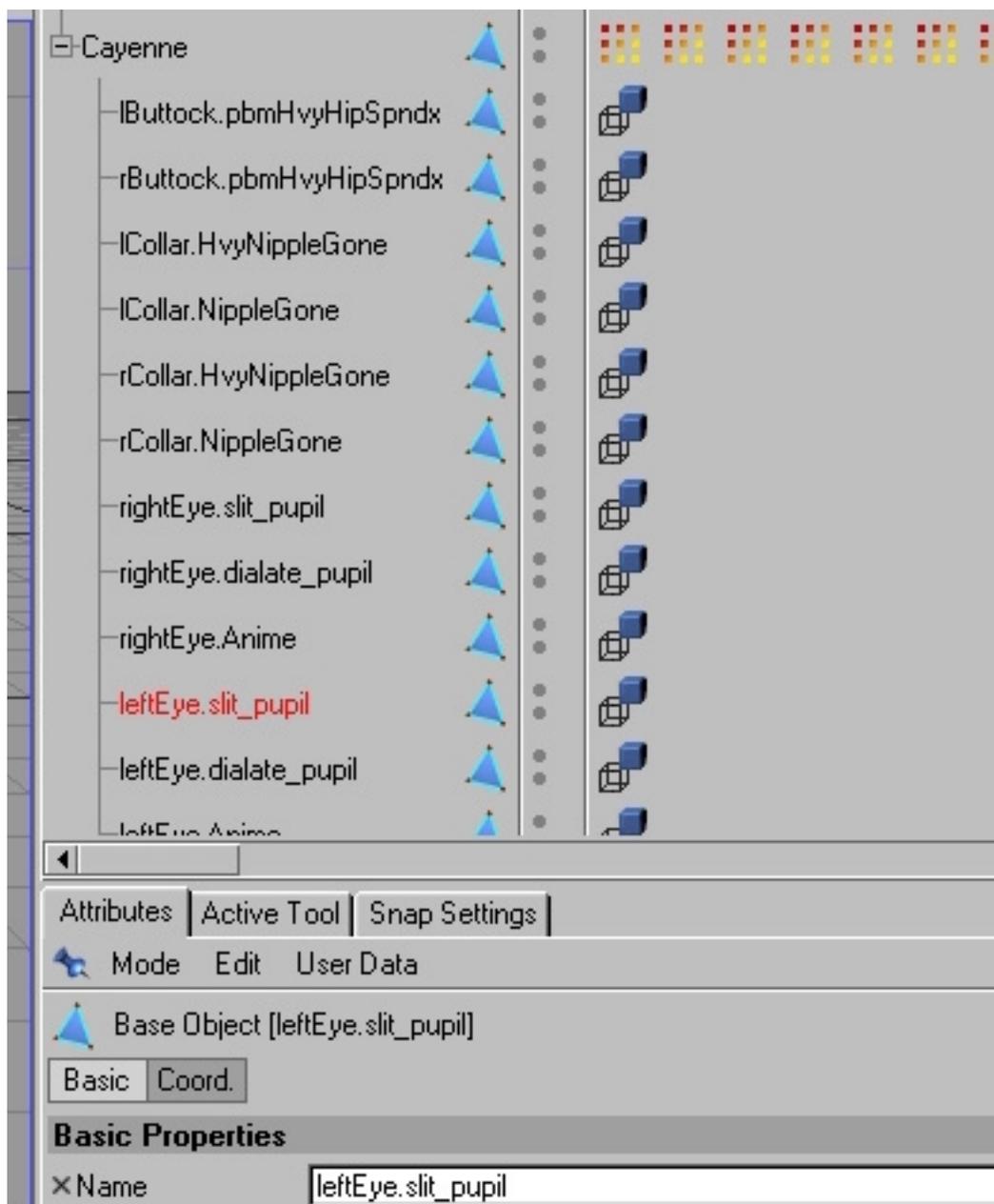
Mode one, the simplest mode for morph tags, is to select a morph tag attached to a body part (bone) and run the plugin. This will write a single output .obj file named "bone.morphname.obj". But if you select

# Greenbriar Studio Cinema 4D Tools

a morph tag that is attached to the main figure object (a body level morph) you engage mode two which will create an output file for each bone (body part) that the morph affects. In other words it will break a body level morph into the separate pieces that can be loaded into Poser. Each piece will also be named “bone.morphname.obj”, bone being the body part they have to load into in Poser.

Modes one and two cover taking a single morph and writing it out into the one or more parts that are needed as morph targets for Poser. Mode three handles the situation where you want to write out a whole set for a body part (like the head). Mode three is engaged by selecting a Bone instead of a tag and then running ‘Export Morph to .OBJ’. this will create an output object file for each morph tag attached to the bone. This is the same as running each morph one at a time, just handier.

Mode four is the export of morphs that are polygon children of the main figure (Mocca style morphs).If you select a Polygon (point only or full polygons) and run the tool, it will treat it as a body morph and write out an .obj file for each body part that the morph affects (since it can’t tell what it really applies to).



# Greenbriar Studio Cinema 4D Tools

Rules - what the morph tool depends on.

The first important rule is what the tool sees as a morph. A tag morph must be attached either to a polygon object or a bone. If attached to a bone there must be a polygon above this bone with only bones in between (a polygon parent to the root bone). If you select a polygon morph its immediate parent must be the base object. And it must have the same point count as the morph. See the pictures for samples showing these relationships.

The other important rule is how the tool can determine the Poser body parts, the real trick here! Cinema 4D does not have a concept of parts like Poser or LightWave. It has general polygon selection tags that are used for multiple purposes. CR2 Loader creates two sets of these. One is used to defined surfaces to control where materials are applied. A second set is also generated, and yes, you guessed it, they are used to retain the Poser body parts, for without this information you can not create morphs, since morphs are based on these body parts. To keep this special set identifiable, they are all simply prefixed with "GR" for a body group. If these are not present, this tool can not generate morphs. So if you create your own custom model with custom body parts, you need to make sure that there is a polygon selection tag "GRnewbonename". The export morph tool will recognize this as the set of polygons that belong to this bone. Note - a bone named 'head' has a selection tag named 'GRhead', so they can be matched back up. With material tags there is an actual link in the tag to the material, but in a body part tag, there is no link to the bone they belong with, so the name has to provide the link.

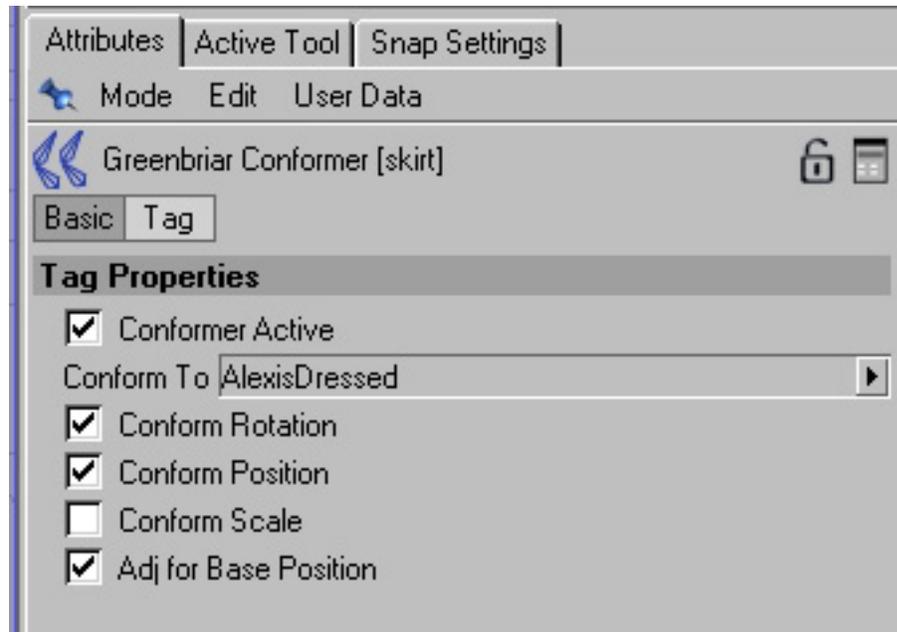
A note on directories. The tool will write the output files into the current directory. On the PC this is normally your project folder. On the Mac it varies, and may be your C4D main directory. There is currently no way to select a directory from within C4D plugin code. It will hopefully be fixed with the next minor update. (CR2 Loader users will have noticed the necessity of selecting a file in the working directory in order to select it. We may add this cludge if users determine it is necessary.) This is a limitation of the current plugin software.

Remember, four modes - select tag on bone writes a single output file, tag on figure splits it out into as many parts as needed (so put your whole body character morphs here and the tool will split them out for you), selecting a bone will write out all the morphs attached to it and selecting a ploygon morph will split it out into it's component morphs. (The trick here is not the split, but not writing all the no change morphs!)

# Greenbriar Studio Cinema 4D Tools

## Conformer

Conformer in Cinema 4D is an expression tag that allows you to ‘conform’ one boned figure to another. The initial goal was to allow Poser conforming clothes to work as expected in Cinema 4D, but it has evolved into a more generally useful tool.



Use is simple. You add the expression to the object that you want to follow another objects motion, such as a piece of clothing. In the tag interface you just grab from the object manager the figure you want to conform to and drag it to the Conform To field in the tag’s properties. Once the Conform to figure is selected you can turn the options and the active status on and off as you like. With this version of Conformer, you can even drag around the conformed items without having to deactivate it.

### Options

**Conform Rotation** - All bones in the figure will follow the rotations of the bones in the Conform To figure.

**Conform Position** - All bones in the figure will follow the positions of the bones in the Conform To figure.

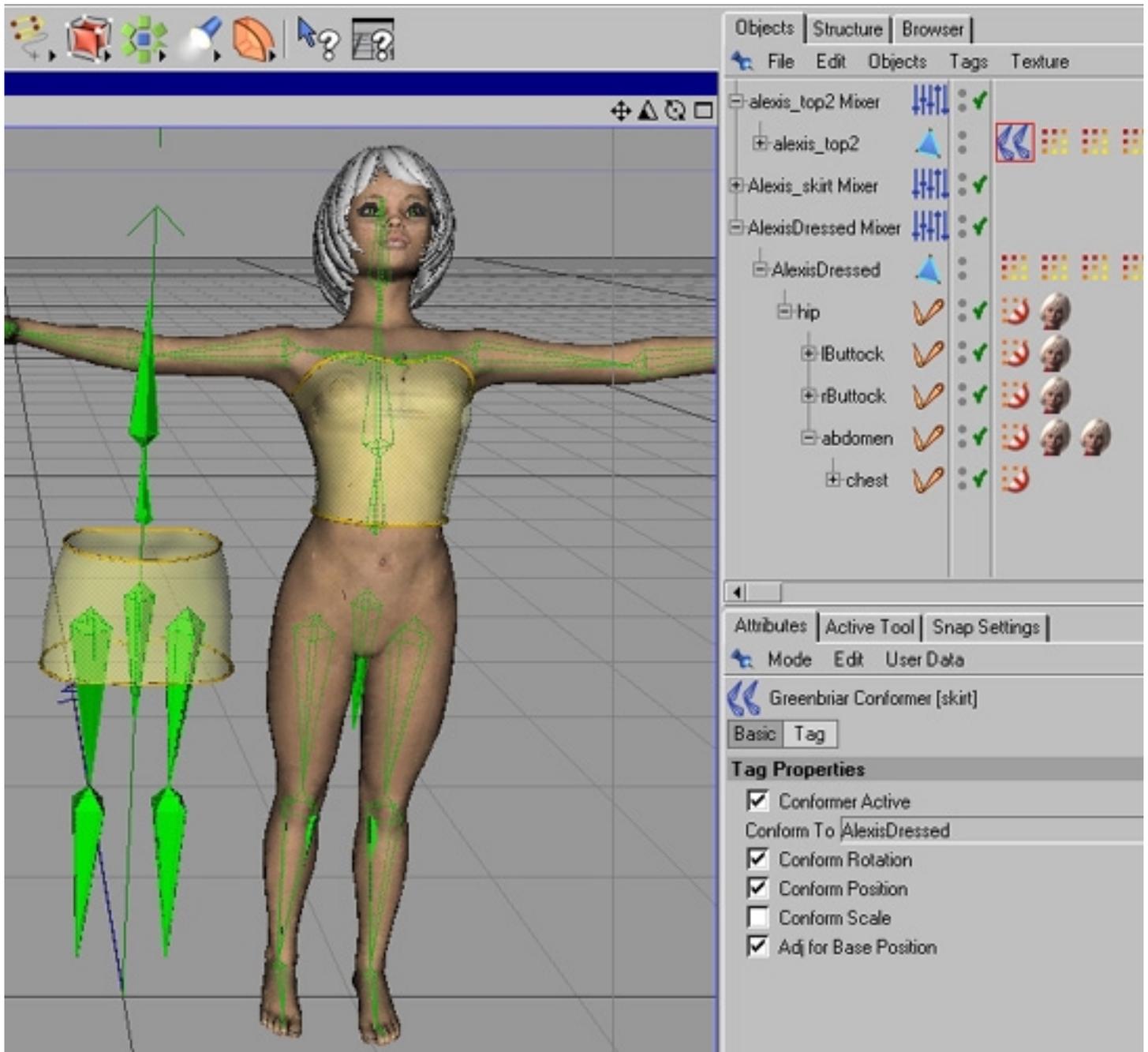
**Conform Scale** - All bones in the figure will follow the scale settings of the bones in the Conform To figure. (Note - use carefully - scaling bones in C4D can yield very strange results!)

**Adj for Base Position** - Very Useful! This switch lets you turn on and off whether the systems adjusts for the difference in starting positions of the two figures (Poser is basically always on). If it is on, the figures will snap together and stay together, no matter where they are located in the scene. Makes things easy, but what if you need to shift the clothes slightly? You can’t, they just move back. If you turn off this switch, you position the two figures in the relationship you want and they stay that way!

# Greenbriar Studio Cinema 4D Tools

You can have something stay by the side of a figure, two figures side by side, clothes moved up or down a little, but move the Conform To figure and everything moves right with it. Experiment with this, it is a very powerful feature.

You can set the conform options separately so that you can do different things with this tool. In addition to making Poser clothes work (which is setting everything on except scale), you can relate multiple figures with just the rotation for a chorus line. Animate one and they all move. Each can still be animated in position separately, but the bone rotations are all tracking from one figure.



Alexis fairy figure showing the top conformed to the figure with the Greenbriar Conformer expression tag. The top is not only tracking position with the figure, but bending backwards with it as well. The skirt is not yet conformed - it stayed where it was when I moved the figure.

# Greenbriar Studio Cinema 4D Tools

## **Important note on how it works**

The most complex part of this system is with the rotations, since most clothes do not have all the bones of the Conform To figure. Conformer works correctly with any figure that has any subset (or subsets) of the Conform To figure's bones, but they must be parented the same! This is the one gotcha. Bones' rotations are defined as the rotation from the parent. If you change the parent the rotations can change radically and applying them from one figure to another mis-parented figure generally makes a mess. Most Poser clothes designed to be conforming have all of a Poser skeleton, or have a Poser skeleton with unneeded parts dropped off. These are not a problem. But we have found a couple where bones were dropped in the middle. An example - a skirt with thigh bones and a hip bone, but no buttock bones in between, the thighs were parented directly to the hip, so the skeleton sections don't match. Fortunately, if you run into one of these, there is an easy fix. Just unparent the bones that are mis-parented. Conformer was written so that it can handle early ends of chains of bones, including multiple ones in a single figure. It hits the unparented bone, sees that it matches a parented bone on the Conform To figure and recalculates how to adjust it.

**How to unparent bones in Cinema4D** (in case you don't know). First - IMPORTANT - turn off the 'enabled' on the bones you are going to unparent. Then drag them over to the base figure polygon object (the one above the hip bone). They will now be all together with the hip bone right under the figure object. Now select each bone you moved and hit the 'Fix with children' under the Fixation tab to turn the bone back on. This keeps the bones from messing up the figure mesh. If you move them without turning the bones off, the mesh will be trashed (so save your scene first, in case you make a mistake).