



Life Forms & Poser:

Exporting animation into Poser

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Background

In version 3, Poser has a BVH motion import function which enables Poser users to import motion from Motion Composition software such as Life Forms. Because of the complementary nature of Poser 3 and Life Forms 3, a tutorial that about how to bring motion from Life Forms into Poser 3 will be useful to many users.

This document is meant for every Poser 3 users: users who have Life Forms 3 and users who would like to use Life Forms with Poser 3.

Key Point

This document is for any Poser 3 user who wants to use Poser's new BVH motion import feature to bring in animation from Life Forms, a motion composition and editing software.

Caveats

We noticed that the elbow seam of Poser models tend to disintegrate when the upper and lower arm are in particular positions. This problem is likely related to how Poser handles and applies motion capture data to its models. You may be able to reduce the disintegration in the elbow seam by applying the motion to another Poser model, or by modifying the motion of the arms. Because, to the best of our knowledge, this problem is seen mainly in the elbow, we feel that Poser 3 users can still benefit from bringing BVH motion data from Life Forms to Poser — and hence this tutorial.

What you need for this tutorial

You will need:

- **Poser 3. (Poser 2 does not have BVH motion import feature required)**
- **Life Forms Studio 3** or demo version of Life Forms Studio 3. (The Demo version can be downloaded for free from <http://www.credo-interactive.com>. Note that the demo version allows you to export only 5 frames of animation).

Life Forms 3 cannot be used with Poser. You need the STUDIO version.



Animating in Life Forms

Why use Life Forms?

You can take advantage of Life Forms highly-efficient interface for animation. Motion editing functions are explain in depth in the User Guide. However, we'll describe briefly how Life Forms is used for animation.

As a Motion Editor

When you need to make changes to a sequence, you can use Life Forms graphical timeline to quickly navigate through the animation. Then, use the Range Edit function to apply a relative or absolute rotation to one or more joints. For example, you have sequence that is perfect for your needs except that the head should be looking down instead of forward. In Life Forms this is simple to fix. Simply select all frames and apply an absolute rotation to the head so that it faces the desired position. You can also quickly change the rhythm or timing of a sequence by adding empty frames with the Insert Frames command.

As a Keyframer

Life Forms is a specialist in Keyframing. When you want to create custom animations from scratch, Life Forms is the tool to use. It has:

- a **Figure Editor** for fast and accurate positioning of joints;
- simple controls for adjusting location and facing angle of the figure in the **Stage window**;
- **graphical Timeline** that gives you the ability navigate through the animation, and expand or contract selected frames.

Life Forms allows you to explore, exercise, and expand your character animation skills.

As a Library of Motions

Life Forms Studio 3 comes with a library of models and motions called PowerMoves. This library contains 120 motion captured sequences, and over 600 other sequences that you can reuse as is, recombine, or modify.

For Smart Paste Functions

With Life Forms you can paste one animation in front of, following, or in the middle of another animation. Life Forms automatically recalculates the location values to produce a continuous path.

You can also paste motion sequences from one model to another. The **Joint Map editor** lets you control how motion data is applied from the a source to a destination model.



Setting up motion sequences for Poser

There are two ways to create motion for Poser 3:

Use motion captured animation

PowerMoves 1 & 2 Library has over 120 mocap sequences you can use. To export a BVH file from Life Forms:

Example

1 Open a motion captured animation in Life Forms

The PowerMoves Library has a collection of mocap animation. They are found in: *PowerMoves CD / PowerMoves II / NEW Motion Capture folder*. If you are using the Life Forms demo version, try *Exercise.lfa* or *HipHop.lfa*. in the *Life Forms Demo folder/ Tutorial folder*. These Life Forms files also contain motion captured animation.

2 Export the motion in a BVH file

Open the Export dialog box by choosing **File menu > Export**. Select Bio-Vision BVH file format from the Export Format list. Uncheck all export option checkboxes. Click OK.

Keyframe your own animation

You can keyframe your own animation using one of Life Forms **Default human models**. Choose **File menu > New Animation** to open a new animation. Choose **Figure menu > New Human Figure** to insert one of Life Forms's Default human models. Click in the Timeline to position the insertion point. Open the Figure editor window by choosing **Window menu > Figure Editor**. In the Figure Editor window, drag the joints to create the desired pose. This pose will appear in the Timeline at the insertion point. Repeat this to create the animation you want. Preview the animation by clicking **Play** in the Control Panel. You can preview the animation in Rendered mode by opening the Rendered window. The next step is to export the motion as a BVH file.

Example:

In this example we will export keyframed sequence called "Soccer tricks" as a BVH file for Poser 3.

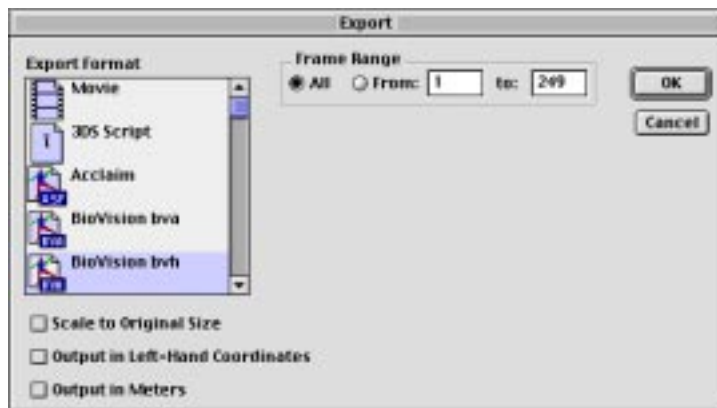
1 Open Soccer Tricks.lfa

Choose **File menu > Open**. Browse to this file in the *Life Forms 3 Demo folder / Cool Demos folder/Soccer Tricks.lfa*, or *Life Forms 3 folder/ Animation Gallery/ Cool Demos/ Soccer.lfa*.



2 Export the motion in a BVH file

Make sure that soccer animation is active by clicking in one of its windows. Then, choose **File menu > Export**. In the Export dialog box, select **BioVision BVH** from the Export Format list



Export Dialog box

3 Unselect all BVH export options

All the following export options are selected by default: Scale to Original Size, Output in Meters and Output in Left-Hand coordinates. Make sure these are **NOT** selected by clicking their checkboxes in the Export dialog box. Export Format list.

4 Name and Save the BVH file.

Name the File Soccer.bvh, and click OK. Two files are exported: Soccer_0.bvh and Soccer_1.bvh: Soccer_0 contains the motion of the Soccer player and Soccer_1 contains the motion of the ball. For this tutorial, we'll ignore the ball's motion.

5 Open the exported BVH file in Poser

In Poser, open a new file and then choose **File menu > Import > BVH Motion**. In the Import dialog box, select Soccer_0.bvh. Click Open. **Warning:** if Poser file you are importing the BVH motion into has existing keyframes, these will be over written.

6 Align Arms along the X axis

A dialog box appears. Click "Along X axis." Poser will now import and apply the motion to the model selected in Poser.



Poser: BVH Import dialog



7 Fine-tuning the imported motion

Examine the figure at each keyframe in Poser 3. You may need to adjust the position of the arms in some keyframes if they intersect with other body parts.

Importing motion from Poser 3

When is this useful?

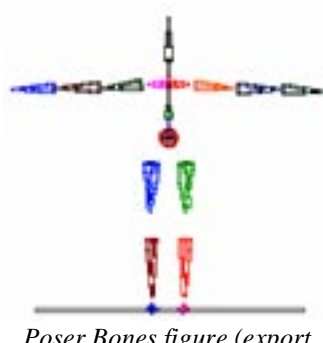
You want to import BVH files from Poser 3 when need to fine-tune (*tweak*) or expand on an animation that you have keyframed in Poser 3. When you export motion from Poser 3 in a BioVision BVH file, the motion is represented by the stick figure shown below. We'll call it **Poser Bones**.



BioVision Skeleton



Default human model



Poser Bones figure (export from Poser 3)

Notice that the rest position, or zero angle position of the arms of the Poser Bones is different from the Default human model and BioVision Skeleton. This makes it slightly more difficult to add animation by pasting animation from the default models to the animation exported from Poser. This problem can be fixed in the Joint Map editor. You can add predefined animation from the Default models and BioVision Skeleton to the Poser Bones figure. We'll show you how in the following example.

Key Point

Pasting motion to Poser Bones is not a recommended as a way to bring motion into Poser 3 except when you want to add to the existing animation in a Poser file. For applying motion to a Poser model with no existing animation see "Setting up motion sequences for Poser" on page 4.



Example:

We will export a set of Bones from Poser, and then paste animation from a Life Forms default model to it. Here are the step-by-step instruction for mapping motion data from the Default human model to the Poser Bones.

1 Export a Bones from Poser

In Poser, choose *File menu > Export > BVH motion*. Save the BVH file.

2 Open the BVH file in Life Forms

In Life Forms, choose **File menu > Open**. Select the BioVision BVH from the File types menu in the Open dialog box. BVH files is now displayed in the Open dialog box. Select the BVH file you just exported from Poser and click Open.

3 Select an Animation in the File Browser

In Life Forms, choose **File menu > Browser**. In the File Browser, locate *Life Forms 3 folder/Cool Demos folder/Dance Variation.lfa*.

4 Position the insertion point

In the Timeline window of the animation you exported from Poser, click any frame. This positions the insertion point at that frame. Then choose File menu > Paste. The Joint Map editor will appear.

5 Paste the frames to Poser Bones

Click the **Paste** button in the File browser. The Joint Map editor will appear.

6 Import a Joint Map

In the Joint Map editor, click **Open Map**. This opens a dialog box which allows you to locate a file containing a completed joint map for this paste operation. Locate **Poser_Bones.lfi**. This file is downloaded with this tutorial and should be in the same folder. Click Open.

7 Close the Joint Map editor

Click OK to close the Joint Map editor and complete the Paste command. The motion of the first figure in Dance Variation will be pasted.

8 Export animation back to Poser

In Life Forms, choose **File menu > Export**. In the Export dialog box, select BioVision BVH from the Export Format list. Clear all the checkboxes as shown, and click OK. Save the File as Dance.bvh

9 Open Dance.bvh in Poser

In Poser, choose *File menu > Import > BVH motion*. **Warning:** if Poser file you are importing the BVH motion to has existing keyframes, these will be over written with animation from the imported BVH file.



Joint Map for pasting motion to Poser Bones

If you are interested in how we defined a joint map for copying motion from the default model to Poser Bones, the following gives you the details.

1 Map all joints except for the Arms

Joints are mapped in the Joint Map editor by selecting a joint in the Destination panel and then selecting the matching joint in the Source panel. Repeat this for all joints, except for the arms and hand joint. These joints need special attention.

2 Map the Left Upper Arms as follows:

Make sure that Map Mirror Joints is unchecked. Click the Left Shoulder in the Destination panel and then click the L Upper Arm in the Source panel. Set the Joint Angles Fields as follows: X = 0, Y = 0, Z = -90.

Angles
X 0.00 Y 0.00 Z -90.0
Choose... Mirror
 Map Mirror Joints

Choose Joint Angles box - L Upper Arm.

3 Map the Right Upper Arms as follows:

Make sure that Map Mirror Joints is unchecked. Click the Right_Shoulder in the Destination panel, and then click the R Upper Arm in the Source panel. Set the Joint Angles Fields as follows: X = 0, Y = 0, Z = 90.

Angles
X 0.00 Y 0.00 Z 90.00
Choose... Mirror
 Map Mirror Joints

Choose Joint Angles box -R Upper Arm

4 Map the Left Lower Arms as follows:

Make sure that Map Mirror Joint is unchecked. Check the Mirror box. Click the Left_Forearm in the Destination Panel, and then click the L Lower Arm in the Source panel.

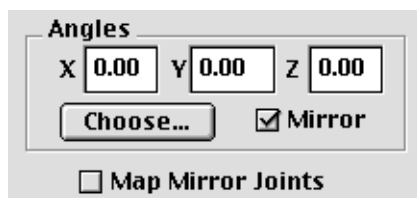
Angles
X 0.00 Y 0.00 Z 0.00
Choose... Mirror
 Map Mirror Joints

Choose Joint Angles box - L Lower Arm



5 Map the Right Lower Arms as follows:

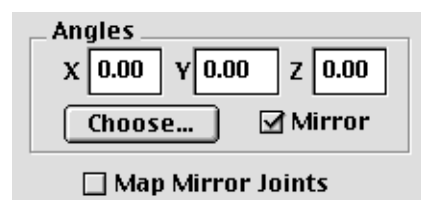
Make sure that the Map Mirror Joint is unchecked, but check the Mirror box. Click the Right_Forearm in the Destination panel and then click the R Lower Arm in the Source panel.



Choose Joint Angles box - R Lower Arm

6 Map the Left Hands as follows:

Make sure that the Map Mirror Joints is unchecked, but check the Mirror box. Click the Left_Hand joint in the Destination panel, and then click the L Hand joint in the Source panel.

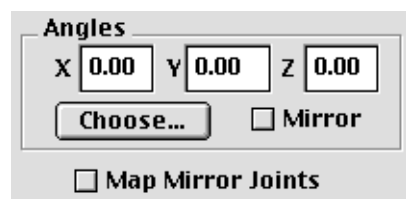


Choose Joint Angles box - L Hand

7 Map the Right Hands as follows:

Make sure both the Map Mirror Joint and Mirror box are not checked. Click the Right_Hand joint in the Destination figure and then click the R Hand of the Source figure.

Now animation can be copied from the BioVision skeleton to the Poser Bones.



Choose Joint Angles box - R Hand

8 Save the Joint Map

Joint maps are saved by exporting them to a Model info file (.lfi). Choose File menu > Export. Select Model info from the Export types list. Click OK. Name and save the file. Note: joint maps are specific for a set of models and they uni-directional, i.e. they contain only information about how to paste motion from a particular source only.



Caveat

We've found that although that motion of the arms copies well from the Default human model to Poser Bones, the arms are not in the exactly same position as they are for the Default human model. To illustrate the point see **Heavy.lfa**. This file should be downloaded with this tutorial. You should find it in the same folder.

Heavy.lfa contains the same motion sequence pasted on the Default model, Poser Bones and the BioVision Skeleton. Step through the animation by clicking the Forward Step button to see where the arm motion of the Poser Bones figure is different from the Default models. To get it exactly right you will have to adjust the position of the arms in the affected keyframes.

What if I want to paste mocap animation to Poser Bones?

In the previous section, we discussed how to apply motion from the Default human model to the Poser Bones. How do I copy motion from the BioVision skeleton to Poser Bones? The solution is a two-step process. First paste the motion from the BioVision skeleton to a Default human model. Then, paste the motion from the Default human model to the Poser Bones as described in the example above.

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