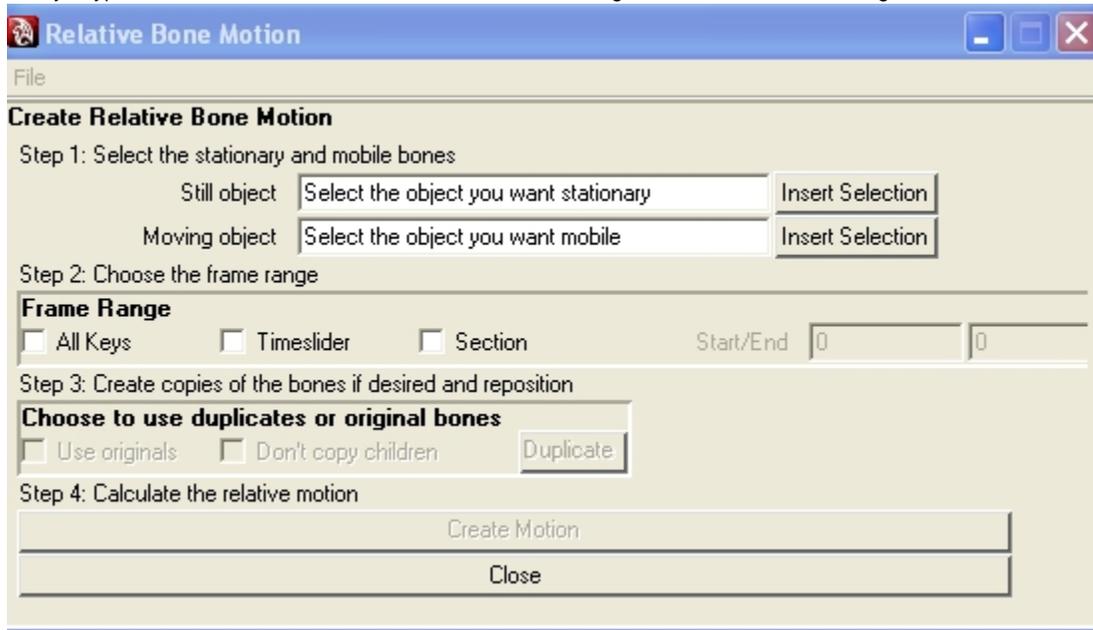


Relative Motion

Calculating motion of one bone relative to another

Using this procedure, you can create an animation where one bone is stationary and the other bones move relative to the stationary bone. You can choose to create a copy of you models, then animate and move the copies around the scene.

1. In Maya, type freezeBone in the MEL command line. You should get a control like the following:



2. Select the bone you want stationary and press the "Insert Selection" button for the still object.
3. Select the bone you want to move relative to the stationary bone (the mobile bone) and press the "Insert Selection" button for the mobile object.
4. Next, choose what frames you want animated. You can animate the whole sequence (All Keys), the frames displayed currently on the timeslider (timeslider) or a section of frames which you type in (Section). Check only one box.
5. You can either use the original models of the bones or create copies of the bones. If you choose to use the original bones, be aware that the original animation will be overwritten, so you may wish to save this as a new scene. If you choose to make copies, you can copy just the bone models or the bone models and any children they may have (anatomical axes, locators etc). If you do not want to copy the children, check the "Don't copy children" box before hitting the "Duplicate" button. At this time, the still and mobile bone will be grouped together and you can move around in the scene.
6. Once you have the bones where you want, press the "Create Motion" button and the relative motion will be calculated and keyed.

After you animate the bones, if you choose to copy the bones, the still and mobile bones will be parented. You can move these copies around after you animate. If you want to calculate the relative motion of multiple bones relative to the same stationary bone, choose to copy the bones and do not move them before animating. Go through the process for the first mobile bone, then, without moving the copies, go through it again with the next mobile bone. Continue until you have animated all the mobile bones. They will be parented to the still and you can move them around after animation.