

Mirror, Mirror

A plugin for Cinema 4D™ by Maxon Computer™

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System requirements

To use Mirror, Mirror you need:

- On Windows: Cinema 4D version 10.111 or higher, Windows XP/Vista/7 32 or 64 bit
- On Mac: Cinema 4D version 10.111 or higher, OSX 10.4 or later

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Demo version

The demo version of the plugin is fully functional but will only work for 30 days after it is first used. After that you will need to purchase a license to carry on using Mirror, Mirror.

Installation

Installing this plugin is just a matter of unzipping the supplied archive into the appropriate location:

- for R10 this is the plugins folder in your Cinema 4D application folder
- for R11 and above it is recommended that you install the plugin into the user data folder rather than the application folder - this is due to the enhanced security in Microsoft Vista and OSX Leopard (Cinema 4D will tell you where your user data folder is if you go to Edit->Preferences, and in the 'Common' tab (R11) or the Interface tab (R12) look in the lower right corner; in the Preferences folder you will find a 'plugins' folder and you should unzip the archive into that)

Entering the license code

When you first run the plugin by selecting it from Cinema 4D's plugins menu, it will ask for a license code. If you want to use the demo version, please enter "MIRRORDEMO" in the dialog box.

If you have purchased a license, you will have received a serial number by email. Type this (or better, copy and paste from the email) into the box and click the OK button.

About Mirror, Mirror

Mirror, mirror on the wall... no, this is not the fairest plugin of them all, but a workflow enhancement intended to address a gap in Cinema 4D's modelling capabilities.

It's quite common to want to mirror an object across an axis. That is, to alter the object so that it becomes a mirror image of itself. Yet C4D doesn't make this very easy. An example might help to demonstrate this.

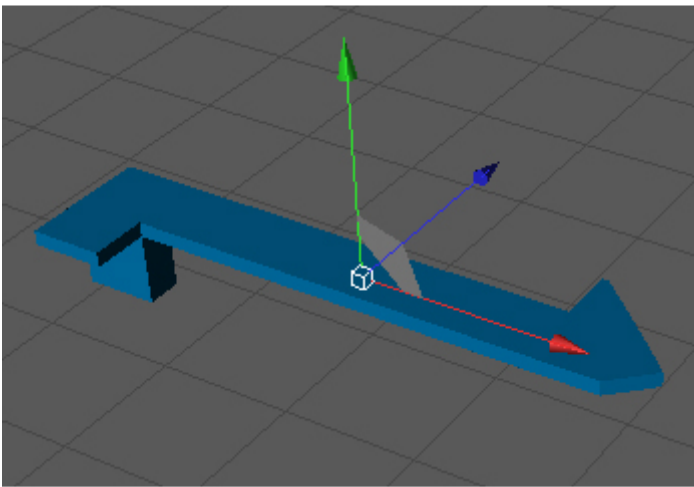


Figure 1 – asymmetric object

Figure 1 shows a simple object which is clearly asymmetrical across all three of the object's axes. (This test object is included in the archive file if you want to try out this example.) If you try to make a mirror image of the object simply by moving and rotating it, you find it can't be done. However, there are several ways of mirroring this object. You could:

1. Drop the object in a Symmetry object (see Figure 2). This works fine, except that the object is duplicated and you can't turn that off. To get rid of the original you need to make the Symmetry object editable, then delete the polygons belonging to the original object. And then move the axis of the object to where you want it, as it won't be in the same place in relation to the mirrored object any more.

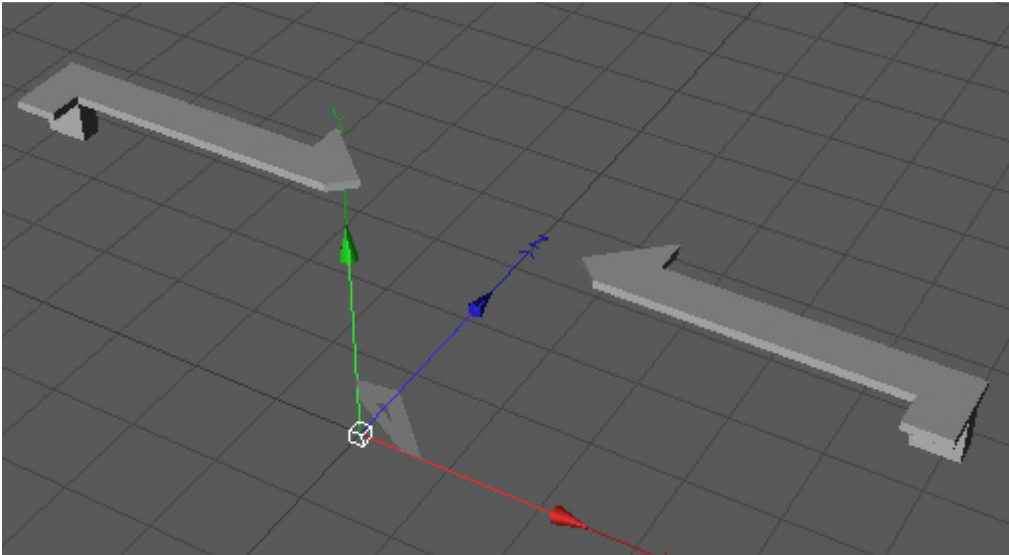


Figure 2 – using a Symmetry object to achieve a mirror

2. Alternatively you could use the Mirror tool. This will work just fine and unlike Symmetry you can turn off the object duplication.
3. Or, you could use the old trick of multiplying the object's position, scale, and rotation by -1 in the coordinates manager. This will mirror the object and you will just have to correct the object's normals, which are inverted by this method.

So with all these methods available, why might you need this plugin? Well, the above methods are not exactly problem-free, other than for simple polygon objects. Once you start adding deformers, NURBS generators, lights, particle emitters and so on to an object hierarchy, these methods either don't work or are very difficult to use to produce a satisfactory result.

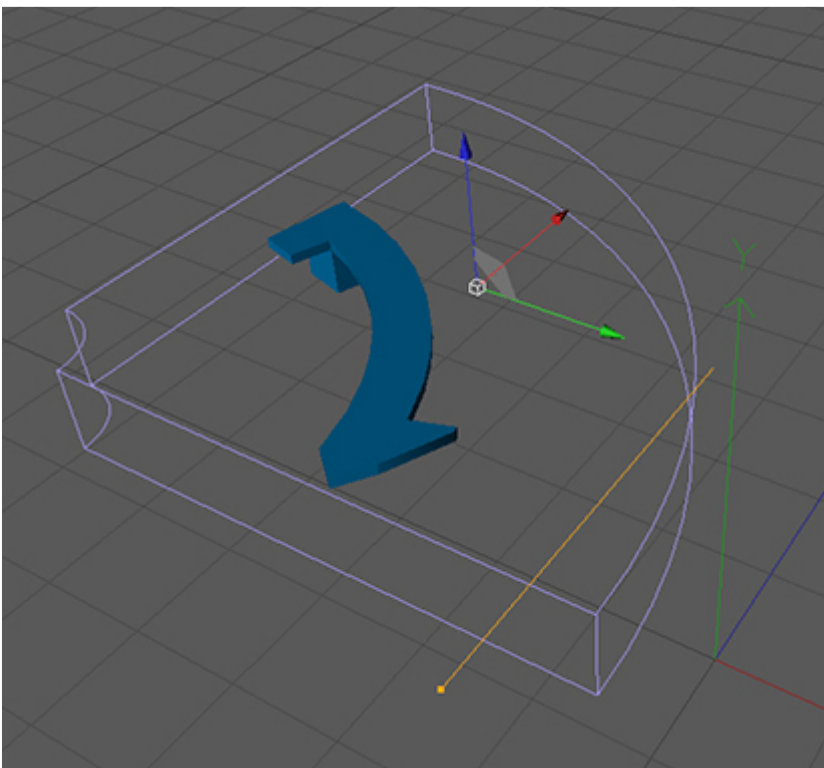


Figure 3 – object with bend deformer

Figure 3 shows the same object with a bend deformer applied. The Symmetry object still works well. However, once you make it editable to delete the unwanted polygons, you lose the bend deformer, so

you can no longer edit it. This is a problem if you still need to adjust the deformer, or worse, if you are animating it.

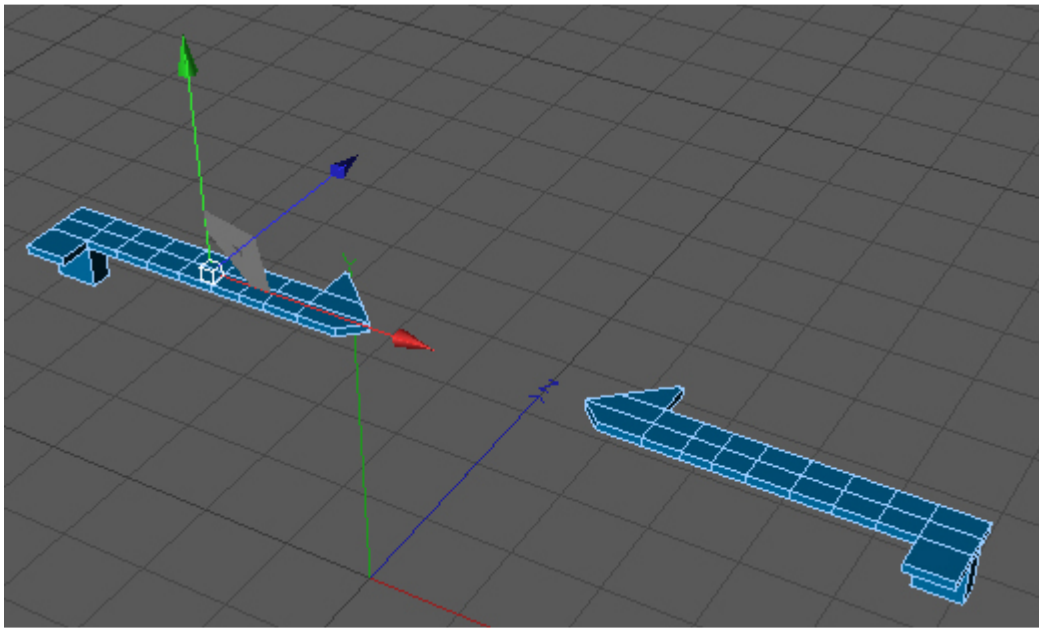


Figure 4 – in polygon mode, after the Mirror tool has been used

In Figure 4, the Mirror tool has been used to create a mirror of the object across the X-axis. In polygon mode all seems well, because the Bend deformer is automatically disabled, but back in object mode not has the tool completely ignored the bend deformer, it moves the object to the wrong position on screen (Figure 5)!

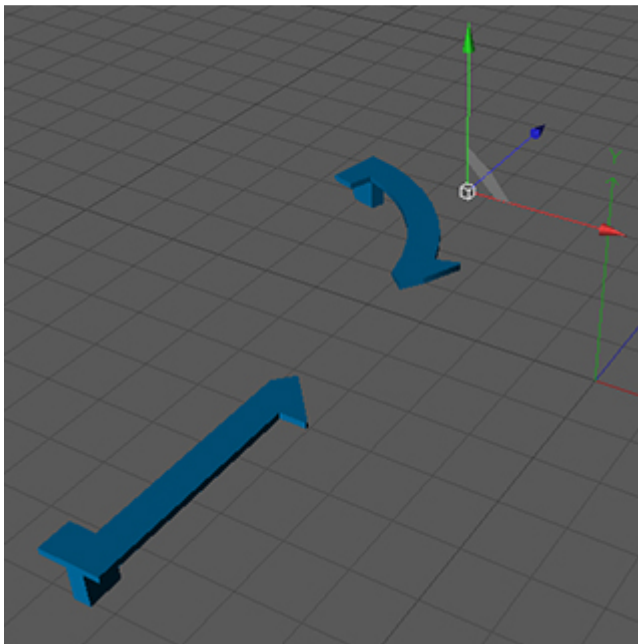


Figure 5 – back in object mode, after the Mirror tool has been used

Multiplying the position, scale and rotation of the object by -1 mirrors the object and at least preserves the deformer, but now the deformation is incorrect (Figure 6.) You will have to fix this manually, and using the '-1 trick' on the deformer isn't the whole answer.

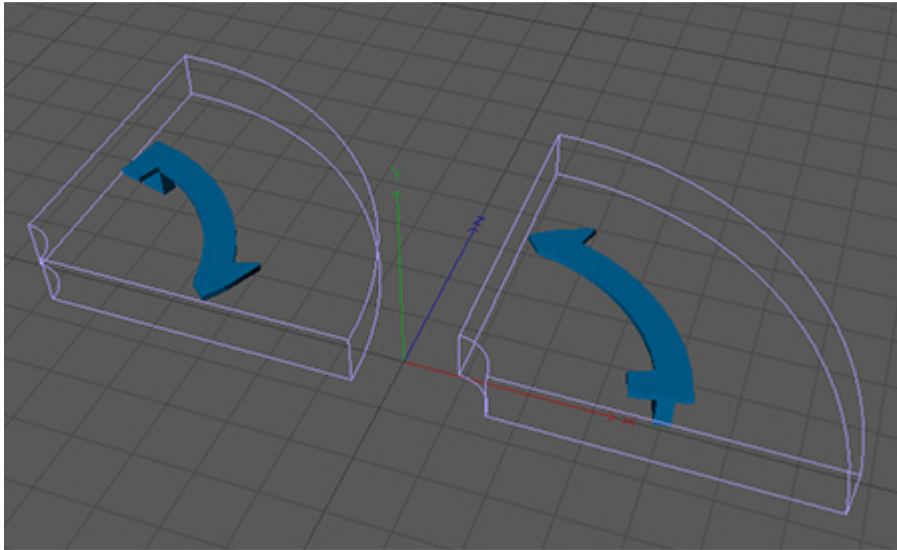


Figure 6 – using the ‘multiply by -1’ trick when a bend deformer has been applied

The transformations in the above example are still pretty straightforward. Not all those methods work on all objects – you can’t, for example, use the Symmetry object or the Mirror tool on a light – they just won’t work. And simple rotation of deformers or NURBS generators won’t always produce a mirror of the original effect; it may be necessary to alter other parameters in the objects in order to get the correct result.

Producing a mirror of a complex object hierarchy with several objects, including perhaps a primitive, a polygon object, a couple of deformers, a spotlight, and a generator object, with the deformations correct and the light pointing in the correct direction, would be very time-consuming if done manually.

Figure 7 (this example is also included in the archive) shows such a hierarchy. Feel free to experiment with producing an exact mirror of this one by hand. It’s not difficult, but it may take you a while. Figure 8 shows what you’re aiming for (done with one click in Mirror, Mirror).

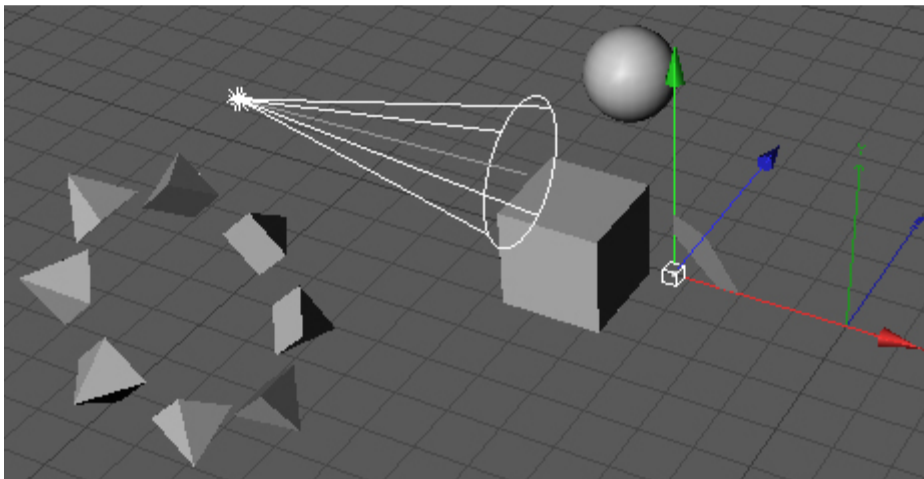


Figure 7 – a hierarchy of objects to be mirrored

What is needed is a simple, preferably one-click solution to mirroring an object across an axis, preserving the object hierarchy (if any) and handling other C4D objects such as generators, deformers, lights, particle emitters, etc., etc. That is what Mirror, Mirror is intended to do. It does nothing you couldn’t do by playing with rotation angles and using the techniques described above, but it may save you a lot of work and hair-tearing when doing it.

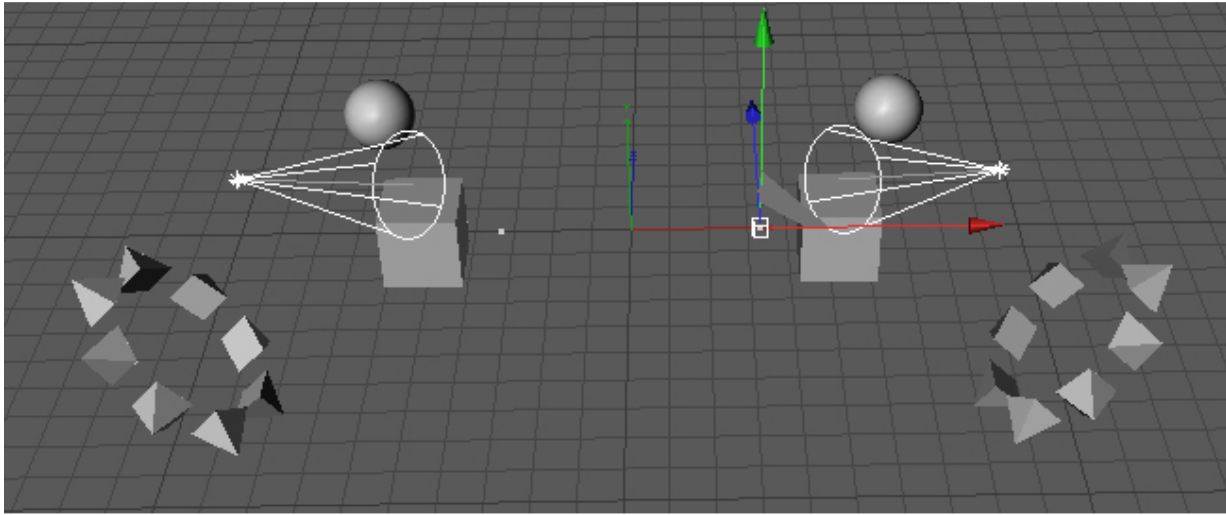


Figure 8 – the mirrored (and duplicated, in this case) hierarchy of objects

Using Mirror, Mirror

If you just want to start using the plugin, these are the basic usage instructions. If you want to know more about what it does, and why there are certain limitations on what it can do, please read the section ‘Why can mirroring an object be so difficult?’ below.

Using the plugin is very simple. All you do is:

1. Select the object to be mirrored (just one object – multiple selected objects are ignored, and if you select an object and its children, nothing happens)
2. Choose the axis – X, Y, or Z – about which to mirror the object (note: these are world axes, not the object’s own axis)
3. Select any other options (you can choose to duplicate the selected object before mirroring it, for example)
4. Click the ‘Mirror’ button

There are various options which you can set, and which you won’t need most of the time, but they are described in the reference section below.

Why can mirroring an object be so difficult?

If we only dealt with symmetrical objects making a mirror image would be easy. We could simply translate (move) the object to the opposite position on the axis (e.g. from X -500 to X +500) and that would be that. If the object was asymmetrical in one or even two dimensions, it would still be possible to mirror the object by rotating it across one or more axes. Unfortunately, it’s likely that many of the objects we model will be asymmetrical across all three dimensions, which means that it is impossible to mirror the object by simple translation and rotation.

If that wasn’t bad enough, adding additional effects through generators, deformers, and so on adds to the problem, as discussed in the introduction.

Mirror, Mirror will examine the object to be mirrored (in the case of a hierarchy of objects, each object in the hierarchy in turn) and perform the necessary actions to create an exact mirror across the chosen axis. It does this by moving and rotating objects, altering various parameters in deformers, generators, and so on, and in the case of editable polygon meshes and splines, mirroring each vertex in the object around the object axis to create a mirror of the original.

Mirror, Mirror always uses the object's local coordinates when mirroring objects. Why?

Each object in C4D has two sets of coordinates – local and global. These can be seen in the coordinates manager by selecting 'World' (global) or 'Object' (local) from the drop down menu below the Position values.

The global coordinates are the location of the object in relation to the world centre. The local coordinates are the position in relation to the object's parent. An example may help to show the difference.

Suppose you have a cube located at X position +500. The cube has no parent object – that is, it is in the root of the object manager. Its local and global coordinates are therefore identical – X is +500 in both cases.

Now add a sphere and make it a child of the cube. Move the sphere until it is 300 units to the 'right' of the cube along the X axis (i.e. in a positive direction). The sphere now has a local X coordinate of +300. But its global X coordinate is +800 (the cube is at +500 and the sphere is 300 units along the positive X axis in relation to the cube, making a total of +800) – see Figure 9.

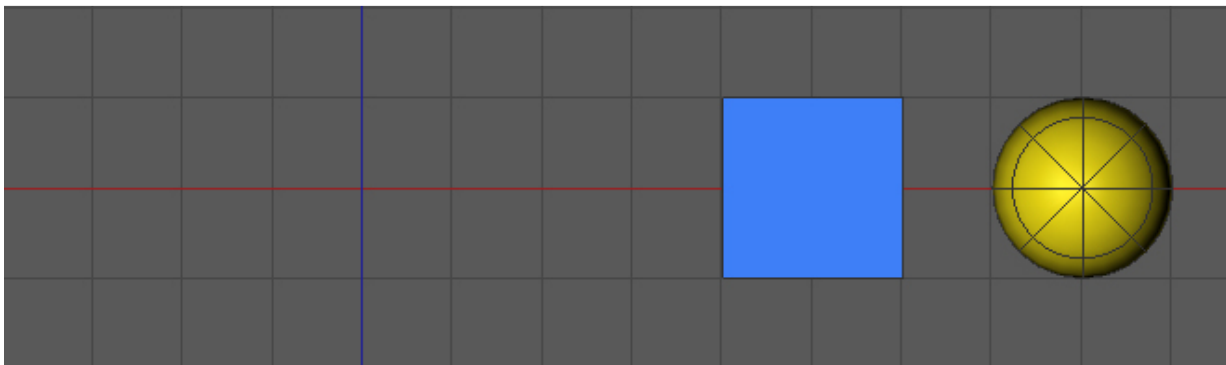


Figure 9 – sphere is at local X +300, global +800

Here's the crucial question: if we mirror this sphere, do we use its local or global coordinates? If we choose the local coordinates, then the sphere, once mirrored, will have an X position of -300 in relation to the cube. But its global X coordinate will be +200 – the cube is at +500 and the sphere is at -300 in relation to it (Figure 10).



Figure 10 – after mirroring with local coordinates, the sphere is at local X -300, global +200

However, if we choose to mirror using global coordinates, the sphere, once mirrored, will have a global X position of -800. Remember, its global X position before being mirrored was +800, so after mirroring it must be -800 if we use the global coordinate system (Figure 11).

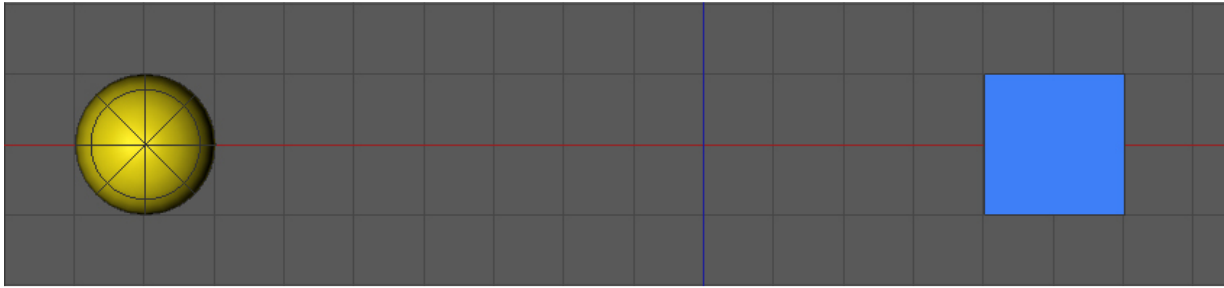


Figure 11 – after mirroring using global coordinates, the sphere is at global X -800 (-1300 local)

Clearly, the two results are very different – in terms of its position in the 3D virtual world the sphere is now either at X position +200 (if mirrored using local coordinates) or -800 (if mirrored using global coordinates). Which one should be used if we want to mirror an object?

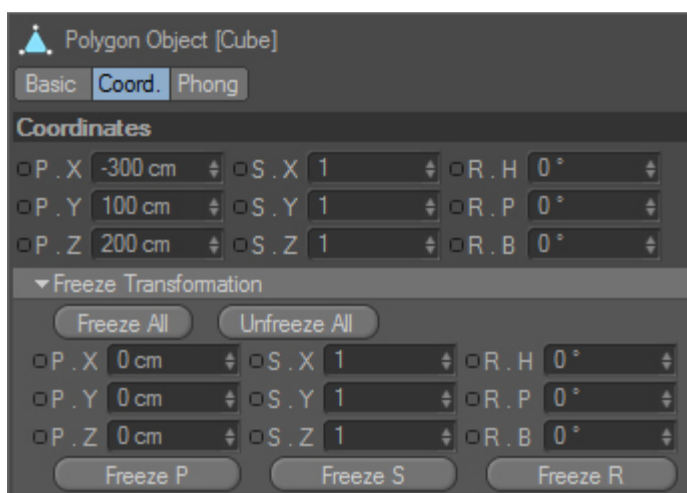
In almost all cases you will probably want to use local coordinates. In this case, using local coordinates will mirror the sphere position in relation to its parent; using global coordinates would put the sphere in a very different position in relation to the cube.

For this reason, Mirror, Mirror always uses the object's local coordinates. **You should be aware, however,** that if an object is a child of another object, its position and rotation in the C4D 'world' are dependent on its parent. Therefore, if you select an object to be mirrored which is itself a child of another object, you may get results which are unexpected. This won't arise very often because in most cases you will want to mirror an entire object hierarchy rather than picking an object partway down the hierarchy and mirroring that. But if you do want to mirror an object partway down a hierarchy, the best way to get the result you want is to take the child object (with its children if necessary) out of the hierarchy and then mirror it.

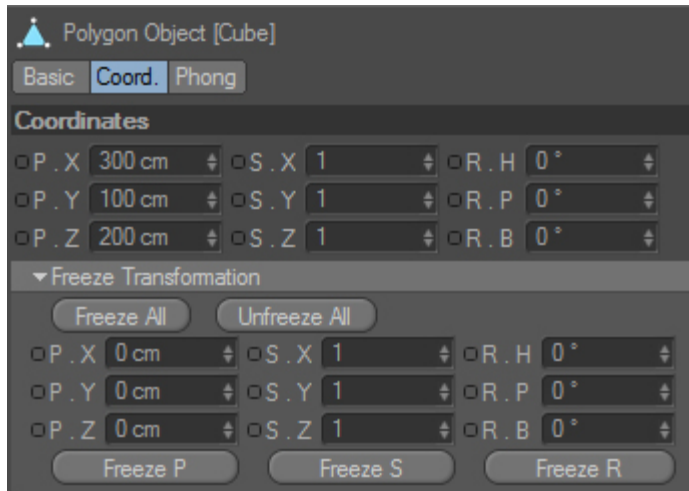
Changes to the coordinate system in Cinema 4D Release 12

In C4D R12, Maxon introduced the concept of 'Freeze Transformations'. These are explained in the help system for R12, and so won't be explained further here. Whether or not you have frozen the transformations for any object doesn't affect the mirroring of that object; it will still be mirrored correctly. However, the coordinates of the frozen object will be affected. An example is probably the best way to demonstrate this.

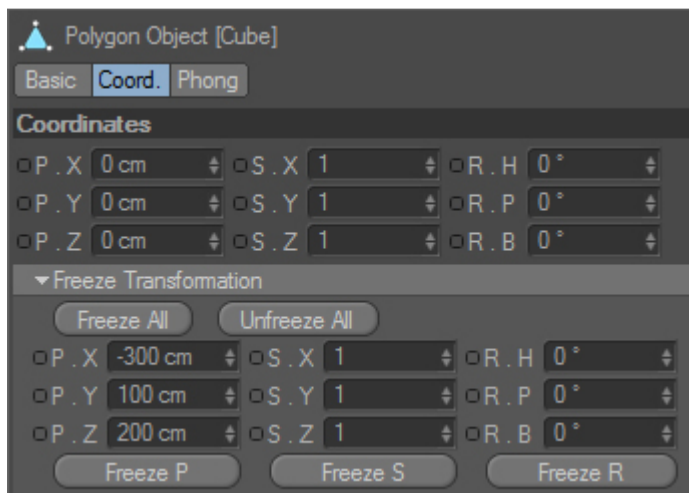
1. In this example, an object has been created and if you look at the object's coordinates, you can see that it has been moved along all three axes:



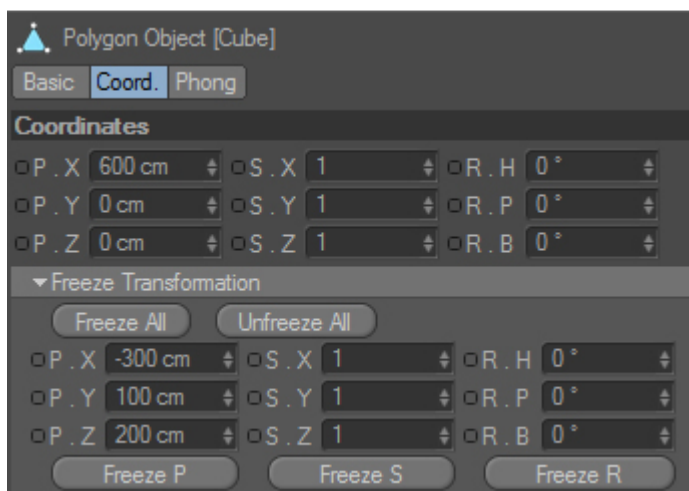
2. Note the X-axis value of -300. If we now mirror this object across the X-axis, the coordinates look like this:



3. Only the X-position has altered, to a value of 300, as we would expect. If we go back to the original position, and freeze the transformations, the coordinates now appear as follows:



4. What happens now if the object is mirrored? It looks correct on the screen, but look at the coordinates:



5. The frozen coordinates stay the same, but the X-position in the upper box shows a value of 600, whereas in the second screenshot above, the value was 300. The reason is that since the frozen transform is $X = -300$, the absolute position is $600 - 300$, which is 300 (the actual position you see).

So what does all this mean? Well, if you haven't frozen the transformations for an object, it means nothing at all – the plugin functions as in previous versions of C4D. If you *have* frozen the transforms, the plugin will still mirror the object correctly but the coordinates returned will not be zeroed, as they should be when the transformations are frozen. This may not matter to you, but if you did freeze the transforms, you probably had a reason for doing so! To correct this, just re-freeze the transforms for the mirrored object and the coordinates will be reset to zero. The object's position will not move, of course.

There is an additional option for the plugin for C4D R12 which automatically freezes the transforms after mirroring. Note, however, that this only freezes the parent object selected in the object manager, and that it freezes ALL transformations. If you want to freeze some coordinates but not others (e.g. rotation but not position), leave this option turned off and re-freeze the coordinates manually. Also, if you have a hierarchy of objects, it is possible to freeze the transforms of objects lower down in the hierarchy independently of their parent objects. The plugin has no way of knowing which, if any, of the objects in the hierarchy had their transformations frozen before mirroring. If you do have child objects with frozen transformations, you will have to re-freeze the transforms of these child objects manually.

What Mirror, Mirror can handle – and what it can't

The plugin can deal with most common objects in the C4D core. The following table lists what it can mirror successfully, any caveats, and if possible workarounds in areas of difficulty:

Object	Comments
Editable polygon mesh	All editable meshes are mirrored.
Editable splines	All editable splines are mirrored.
Primitives (Cube, Cone, etc.)	All primitives are mirrored except the Landscape object. This can only be mirrored across one axis, which depends on the orientation of the primitive. The reason for this is that the Landscape object is asymmetrical across all three axes. The only way to mirror such an object successfully is to mirror each vertex's position around the object axis, but this is a primitive and so its vertices cannot be changed. The workaround is to make the object editable, and it can then be mirrored as for any editable mesh.
Primitive splines (Circle, Cogwheel, etc.)	These can all be mirrored except the Helix spline. At first sight this exception looks odd, because the Helix appears symmetrical on two of the three axes. The problem is that the Helix spiral is 'wound' counter-clockwise, and the only way to mirror it would be to wind it clockwise instead. Unfortunately there is no such attribute in the Helix spline, so it can only be mirrored after first making it editable.
NURBS generators (HyperNURBS, Sweep NURBS, etc.)	<p>These can all be mirrored.</p> <p>Important note 1: there is an issue with the Sweep NURBS when a non-symmetrical spline primitive is used as one of the splines in the NURBS (profile, path, or rail). Under these circumstances the Sweep NURBS may not mirror correctly because the points of the spline primitive are not accessible and therefore cannot be mirrored. If the spline primitive is first made editable, the problem is resolved. This issue is most apparent when a Text spline primitive is used.</p> <p>Important note 2: because of the way the Sweep NURBS handles the rotation of the generated object, the splines which are children of the</p>

	<p>Sweep NURBS are handled a little differently to other objects. For this reason, if you need to mirror a spline which is a child of a Sweep NURBS, without mirroring its parent, un-parent it from the Sweep NURBS and place it in the root of the object manager, <i>then</i> mirror it. This will ensure a correct mirror. Of course, you don't need to do this if you are mirroring the Sweep NURBS itself – the NURBS and its splines will then be moved and rotated to achieve the mirrored effect.</p>
Other generators (Array, Boolean, etc.)	<p>These can all be mirrored, even the construction plane!</p> <p>There is an issue with the Instance object. If the reference object for an instance is mirrored <i>without</i> being duplicated, the instance will be updated accordingly, as you would expect. However, if the reference object is duplicated then mirrored, there will be no effect on the instance, because the reference object has not changed.</p> <p>If the instance object itself is mirrored, the mirroring will have no effect on the reference object, but the instance may not be mirrored correctly, either. This is because the appearance of the instance object is dependent on its reference object, which has not changed. The bottom line is that it is probably best not to mirror instance objects, and if you mirror a reference object for an instance, be aware that the instance will not change if you duplicate the reference object before mirroring.</p>
Null objects	Can be mirrored without problems.
Lights	Can all be mirrored, with the exception of the Sun light. This is because the position of the Sun light is controlled by the Sun tag, and this overrides any attempt to mirror the position of the light itself.
Particle emitters and modifiers	<p>These can all be mirrored. If a particle emitter is mirrored, the direction of particle emission is taken into account and this is also mirrored.</p> <p>Important: if you mirror a particle emitter, be sure to rewind the timeline to before the point where the emitter starts to emit particles, <i>then</i> mirror the emitter. This is because mirroring particles which have already been emitted won't work correctly.</p>
Deformers (Bend, Twist, etc.)	<p>The common deformers can all be successfully mirrored. These include Bend, Shear, Twist, Taper, Bulge, Bone, and the Freeform deformer (FFD). Deformers such as Explosion, Explosion FX, Shatter, Melt, and Wind can also be mirrored, but there's a problem here. These all include one or more 'randomness' attributes, which have the effect of making the mirrored object look slightly different from the original. If the randomness parameters are reduced, the mirroring becomes more accurate, and setting it to zero produces a perfect mirror. There doesn't seem to be any way around this.</p> <p>In addition, the Spline Rail and Spline Deformer cannot be mirrored with this plugin, because they use spline objects outside the object hierarchy.</p> <p>New deformers in C4D R12</p> <p>Five new deformers were introduced with R12 – the Camera, Correction, Mesh, Smoothing, and Surface deformers. These are not yet supported by Mirror, Mirror; not all are appropriate for use with this plugin (such as the</p>

Camera deformer, for example) and others will take time to implement. When they are implemented, the updated version will be provided as a free upgrade.

Important: to be active, a deformer is always a child of another object. Its rotation and position will therefore change if those of its parent change. If Mirror, Mirror is used to mirror a deformer independently of its parent (that is, the deformer is the primary object selected in the object manager) the position and rotation of the mirrored object may not match the original deformer. For this reason, if you need to mirror a deformer without mirroring its parent, un-parent it from the deformed object and place it in the root of the object manager, *then* mirror it. This will ensure a correct mirror. Of course, you don't need to do this if you are mirroring the parent of the deformer – the deformer will then be moved and rotated to achieve the mirrored effect.

Note on bone deformers: in C4D R12, bones are no longer supported. Any scene including bones will result in the bones being converted to joints. As indicated below, joints are not handled correctly by this plugin, so it is suggested that you do not use it in object hierarchies containing them.

Tags	<p>Most of these don't cause any problems, but there are some exceptions. These are:</p> <ol style="list-style-type: none">1. The Fix tag. Since this tag is designed to prevent an object being moved, you cannot use Mirror, Mirror to move an object with the tag applied. You can still rotate it and mirror its points, though. The effect is identical to setting the Mirror options to 'Rotate only'.2. Align to Path and Align to Spline tags. These tags determine the position and rotation of the object; using Mirror, Mirror on an object with this tag applied produces unpredictable results.3. Look at Camera. This tag controls the rotation of the object such that its Z-axis points to the camera. It will override any rotation applied by the plugin, but object movement is still possible.4. Normals tag. Models which are imported from another source and which have a normals tag may show shading artefacts after mirroring, especially in V-ray. This problem can in some cases be corrected by turning on the option 'Mirror normals tags if present'. However, this will not fix the faceting which can appear on some objects with normal tags; this is not a problem with Mirror, Mirror but is inherent in C4D and the normal tags. It will also appear if you use the 'multiply by -1' method to mirror an object with a normal tag and phong shading.
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Unfortunately there are some objects which Mirror, Mirror just can't handle. These include:

Object	Comment
Mograph	The Mograph cloner is no problem and can be successfully mirrored, but any effectors operating on it will not be mirrored. This is not impossible to achieve but is complex and will require a future version of the plugin.
Cloth	Mirror, Mirror will not work on objects with a cloth tag. In fact, this is the same as trying to move or rotate such an object manually in C4D – it just

	can't be done. You can turn off the cloth engine in the tag, and then move an object, but as soon as you re-enable the engine the object snaps back to its original position.
Joints	These can in fact be mirrored... but all the joint angles are affected, which is not a good idea. It is strongly recommended that you do not use Mirror, Mirror on rigged characters. Use the tools in MOCCA or the excellent plugins from Cactus Dan to do this.
Hair object	The objects with hair attached will be mirrored as normal but the hair itself probably won't be. Results are essentially unpredictable in this version.
Other objects, tags, etc. added by plugins from third-party suppliers	It may or may not be possible to mirror these. Since I don't own them all, I haven't been able to test them, so all I can do is offer no guarantees that Mirror, Mirror will work on these objects successfully.

A note on textures

If an object has a UV-mapped texture, the appearance of the texture on the object will be mirrored, just as it would be if you looked at the object in a mirror. Most of the time, this will probably be what you want (or you don't care anyway). Occasionally you might want the texture to look the same on the mirrored object as it does on the original (i.e. the object would be mirrored but the texture would not). To achieve that you will probably need to mirror the texture in an image editor and possibly remap the object's UVs.

Mirroring object hierarchies

Mirror, Mirror follows some simple rules when working on object hierarchies. These are:

- an object in the root of the object manager and with no children is the only object mirrored; sibling objects are not affected
- an object in the root of the object manager and which has children will be mirrored, and all its children will be mirrored as well
- mirroring of an object's children can be turned off by checking the option 'Mirror primary object only' in which case the children will not be mirrored (but will appear to be moved and rotated because C4D will maintain their position and rotation relative to their parent object)
- if an object which is a child of another object is selected, only that object (and its children, if it has any) will be mirrored (unless mirroring of children is turned off); the selected object's parents will never be mirrored or affected
- if more than one object is selected in the object manager, no mirroring or other action takes place

Each option in Mirror, Mirror is described here. The screenshots below show the plugin interface.

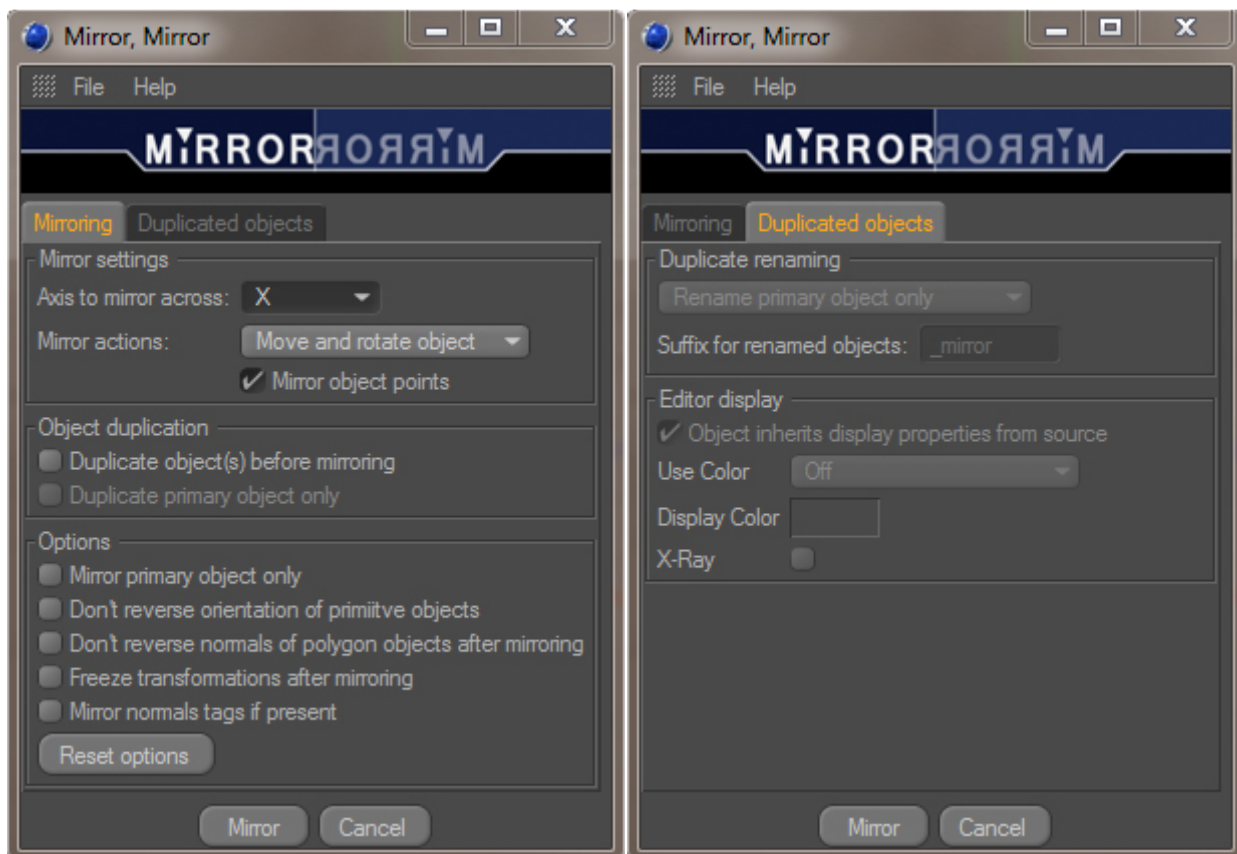


Figure 9 – the Mirror, Mirror interface in C4D R12

Mirroring tab

1. Mirror settings

1.1. Axis to mirror across

This is where you select the world axis across which the object will be mirrored. By default this is the X axis but the Y or Z axes can be selected from the drop down menu.

1.2. Mirror actions

This drop down menu may occasionally be of use. Mirror, Mirror works by moving and rotating an object then carrying out any other actions necessary to create a mirror image – such as mirroring individual vertices or altering relevant attributes of the object. Sometimes it's useful not to move, or not to rotate, an object before any other actions. This won't produce a mirrored image, which seems a little odd in a plugin designed to mirror objects – so why have this option?

Well, for example you might want to produce a mirrored object but not move it from its current position, just mirror it around its axis. To do this, set this option to 'Rotate only' and then click 'Mirror'. You should note that since child objects will rotate but not move around their parent, the hierarchy may not be correctly mirrored in this case.

Alternatively you could simply want to duplicate an object (and its children) and move it to the opposite position on the axis, without rotating it. Select 'Move only' in the menu for this. Clearly, this won't produce a true mirror, but it would move (or copy) the object to the same position on the opposite side of the chosen axis. **Make sure to turn off 'Mirror object points'** to ensure that the object the plugin acts on is not altered in shape, just position.

In some cases you don't want to move or rotate an object but only produce its exact mirror image while leaving it in place. To do this, set the drop down menu to 'Neither move nor rotate' but leave the option 'Mirror object points' checked. This is only useful for editable meshes and editable splines (see below). Again, object hierarchies may not be successfully mirrored if you do this.

It hardly needs to be said that if you set this option to 'Neither move nor rotate' and uncheck 'Mirror object points' absolutely nothing will happen when you click the 'Mirror' button, *unless* 'Duplicate object before mirroring' is checked, in which case a copy of the object and its children will be generated in the exact same place as the original.

1.3. Mirror object points

This option is on by default, and will cause the plugin to mirror the vertices of an object about the object's axis, to produce a mirror image. Needless to say, this will only work with objects with editable vertices, such as polygon meshes, editable splines, and rather curiously, the Free Form Deformer (FFD) and Bezier NURBS objects.

These mirroring options can be confusing, and experimentation is strongly recommended.

2. Object duplication

2.1. Duplicate object(s) before mirroring

This option, if checked, will duplicate the object (including its children unless the option 'Duplicate primary object only' is checked) and will then mirror the duplicate. Effectively this is like the Symmetry object except that the object hierarchy is preserved and can be edited.

2.2. Duplicate primary object only

If the option 'Duplicate option before mirroring' is checked, this option is enabled. By default it is unchecked, so that all child objects in the hierarchy (if one exists) will also be duplicated. If it is checked, only the primary object, the one selected in the object manager, will be duplicated. If the selected object has no children, this option will have no effect.

3. Other options

3.1. Mirror primary object only

Checking this option will cause Mirror, Mirror to mirror only the object selected in the object manager. If that object has child objects, they will not be mirrored. Of course, this will mean that the object hierarchy is not mirrored perfectly.

Note 1: since mirroring the primary object will move and rotate it (unless you turn those options off – see above) all the object's children will also be moved and rotated, but will not be mirrored.

Note 2: this does not affect object duplication. If you have 'Duplicate object(s) before mirroring' turned on, the objects in the hierarchy will all be duplicated regardless of this setting. To duplicate only the primary object, check the 'Duplicate primary object only' option (see above).

3.2. Don't reverse orientation of primitive objects

When a polygon object or editable spline is mirrored, a mirror image is created by mirroring each vertex in the object around the object's own axis. This is not possible for primitive objects, but most of these are symmetrical in at least one axis, so they can be mirrored by reversing the orientation plane (e.g. by changing it from X+ to X-). If you don't want that to happen, check this option. This is analogous to unchecking the option 'Mirror object points' for editable polygons and splines.

3.3. Don't reverse polygon normals

This option only applies to editable meshes. The action of mirroring an object's vertices causes the object's polygon normals to be inverted. For convenience Mirror, Mirror will re-invert the normals after mirroring. If for some reason you would prefer that didn't happen, check this option.

3.4 Freeze transformations after mirroring (R12 only)

If this option is selected, after the object is mirrored, its transformations will be frozen. This produces exactly the same result as choosing 'Freeze Transformation' in the Functions menu in Cinema 4D. See the section 'Changes to the coordinate system in Cinema 4D Release 12' above for more details.

3.5. Mirror normals tags if present

This option may be useful if you use the Vray renderer. Models which are imported from another source and which have a normals tag may show render artefacts after mirroring if rendered in Vray. (This is also the case if you use the 'multiply the coordinates by -1' trick, so the issue is not confined to this plugin.) It doesn't seem to be a problem, or not so much of one, if using the core renderer or the Advanced Render module. The problem can often be corrected by turning on this option. It is not clear yet if this is a universal solution to the problem, but it certainly works in many cases. At the moment therefore, this option should be regarded as a semi-experimental one intended mainly for Vray users.

3.6. Reset all options

This button does exactly what it says – resets all the options to their default values. These are:

- mirror across the X axis
- mirroring is set to move and rotate object
- mirror object points is ON
- duplicate objects before mirroring is OFF
- duplicate primary object only is OFF and disabled
- all other options are turned OFF
- object renaming is set to rename primary object only and disabled
- duplicated objects inherit their editor display settings from their parents

Duplicated objects tab

4. Duplicate renaming

If the option to duplicate objects before mirroring is selected, these options become available. It is there as a convenience to allow you to distinguish between the mirrored duplicate and the original object. By default only the primary object selected in the object manager is renamed, and its children will not be renamed. The drop-down menu also gives you the options of forcing all objects in the mirrored hierarchy to be renamed, or for none of the objects (including the primary) to be renamed.

If you are using C4D R11.5, there is an additional option to let C4D itself handle object renaming. This function was present in R10.5 and earlier, but did not work correctly, so was removed completely in R11. If you choose this option, C4D will examine the names of all duplicated objects and rename accordingly by adding a suffix such as ".1" to the new object.

If you let Mirror, Mirror do the renaming you can choose the suffix to add to the renamed object(s). By default this is "_mirror" but you can change it to anything you like.

5. Editor display

By default duplicated objects inherit their editor display parameters from their parent. These include the use of a colour in the editor and X-ray mode. If you uncheck the option 'Object inherits display

properties from parent' you can alter the display mode, display colour, and turn X-ray mode on or off. These options are identical to those you find in the C4D attributes manager, basic tab, for any object.

Important: please note that if you change any of the Mirror, Mirror options, and then close the dialog box, all the settings are preserved for when you next open it. To reset all options to their defaults, use the 'Reset options' button.

Menu entries

1. File: Close manager

Closes the plugin dialog box. Same as clicking the 'Cancel' button.

2. Help: Enter serial number

This menu entry is only available if a valid serial number has not yet been entered. When you run the plugin for the first time you will be prompted to enter a serial number. This can either be "MIRRORDEMO" if you want to try the demo version, or a serial number that you received after purchase. If you enter a valid serial, this menu entry will not be available any more. If you enter the demo serial above, the menu entry remains so that you can enter a valid serial if you purchase a license.

3. Help: Simple usage...

This entry opens a small dialog box giving some very basic instructions for use. You won't need this after using the plugin for a few minutes.

4. Help: Main help file (PDF)

Opens the plugin help file (you're reading it) in Acrobat Reader.

5. Help: About...

Opens a small dialog box giving copyright and version information.

Contact and updates

The latest version of the plugin can be obtained from the plugin website,
<http://www.microbion.co.uk/graphics/c4d/mirror.htm>.

I hope you find Mirror, Mirror a useful addition to your workflow. If you have any queries, suggestions for improvements, or if you find a bug, please contact me at steve@microbion.co.uk.

Steve Pedler
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