Visualization Insider
Creating 3D Furniture

Guest article written by Alexander Gorbunov from Intero Visuals
Introduction

Hello, my name is Alexander Gorbunov from Intero Visuals (www.interovisuals.com). My company specializes in the creation of 3D furniture and my friends at 3DAS asked me to write a tutorial for the Visualization Insider about how we create furniture. 

One of the most difficult challenges of a 3D interior project is providing the client with suitable 3D furniture. Many times the client does not want to use stock furniture or take the time to look through so many sample images. When this is the case, creating custom furniture is the only alternative. But if not done wisely, creating custom furniture can be a very time-consuming process and can end up taking longer than the entire rest of the project.

The following is a pictorial based tutorial that shows you how to quickly and efficiently create furniture from nothing more than a simple image. Using the tools and methods highlighted here, you can create almost any type of furniture you want.

This tutorial is just part of a much larger discussion on furniture creation that will appear in the 3DATS publication 3ds Max 10 Architectural Visualization – Intermediate to Advanced due out later this year. In the following tutorial here, the process is shown mostly through pictures alone. The tutorials in the 3DATS book will be described in greater detail with written explanations at each step of the process. In this book readers will be shown more complex furniture pieces like the sofa shown below.

Real sofa                                                                  3D Sofa

I hope you enjoy this tutorial. If you have any questions about it or would like help in the creation of 3D furniture, I can be reached at alexg@interovisuals.com. Thank you!
Step 1- Bring reference image into scene

Create a plane object that has a size of reference image.
Step 2 - Modeling rear legs
If you want to start with the completed scene from step 1, open the file Chair_1.max
Right-click mouse button and select “Convert to Editable Poly” from quad menu.
After doing a polygon check of every corner of object, perhaps at least at one of them vertexes are messed up.

Move vertices manually to fix problem.
If you want to continue from this point with the correct scene, open the file Chair_2.max
Step 3 – Modeling front legs
To select ring of parallel edges you can select a single edge and then click “Ring” button in “Selection” rollout.

Push “Loop” button in “Selection” rollout to expand edge selection.
Step 4 - Modeling chair base

If you want to start with the completed scene from step 3, open the file Chair_3.max
To select all edges, press **Ctrl+A** while in “edge” subobject mode.
Press Ctrl+A to select all edges again.
Step 5 – Create head rest
Cut selected polygons along virtual line using “QuickSlice” tool.
Chamfer bottom edges twice as we did before. Apply the **Smooth** modifier.
Rotate the bend modifier’s gizmo to adjust bending direction.

Move vertices manually.
Step 6 – Create back rest

Bevel edges and apply bending.
When rotating, make sure you work in local coordinate system.
After mirroring, it’s possible that you have created coplanar faces in this area. Move the mirrored object a little to avoid this.
Step 7 – Create seat
If you want to start with the completed scene from step 6, open the file Chair_4.max
Step 8 – Tweak geometry
Move FFD(box)'s control points to achieve desired results.
Step 9 – Make arm rests
If you want to start with the completed scene from step 8, open the file Chair_5.max
Step 10 – Make decorative bands
If you want to start with the completed scene from step 9, open the file Chair_6.max
Step 11 – Assign Material IDs
If you want to start with the completed scene from step 10, open the file Chair_7.max
Select ring of parallel edges

Convert selection into polygons
Grow the polygons selection
Step 12 – Applying Materials
If you want to start with the completed scene from step 11, open the file Chair_11.max

fourgrid.tif
Copy the highest value into every slot.

Texture lays out in wrong direction.
Rotate modifier’s gizmo and make sure you are in local reference coordinate system.
Adjust UVW Mapping modifier’s gizmo as needed.
Step 13 – Rendering
If you want to start with the completed scene from step 12, open the file Chair_8.max
If you want to see the completed scene, open the file Chair_8.max