

Artist PROFILE

Francis Tsai

COUNTRY: US

CLIENTS: Playboy, Mattel, Motion Theory, Privateer Press



Francis works as a conceptual designer and illustrator in

the entertainment industry. He studied physical chemistry and architecture and worked in the latter for several years before leaving to pursue his current career in TV, comics and film. www.teamgt.com

Artist insight USING 3D IN 2D

3D modelling tools extend the efficiency of an illustrator's toolset. **Francis Tsai** explains how to make them work for you

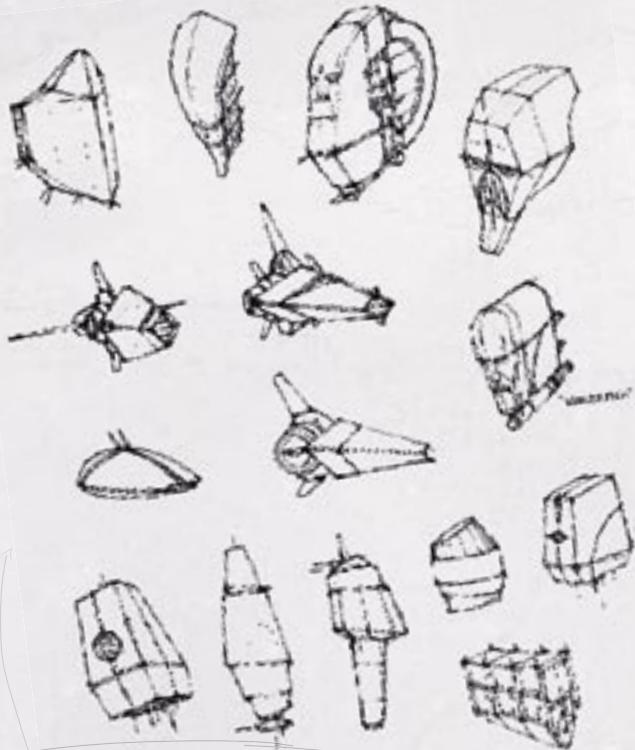
For 2D artists, I like to think of certain 3D tools as 'bionics'. What I mean is that to me, 3D tools are like a powered exoskeleton for 2D artists, meaning that the tool enables an artist to do the things he or she

already knows how to do, only with more strength, speed and efficiency.

In the past I've used a number of 3D apps, such as AutoCAD, 3ds max, Maya, and Rhino3D. Awesome tools, but when using those tools I always felt like I was driving a battleship instead of

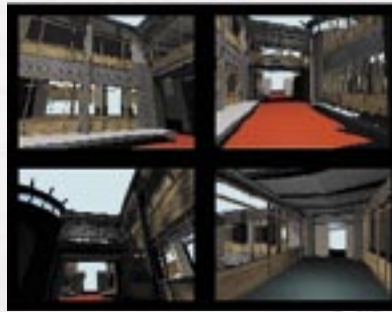
wearing an exoskeleton. Recently I've been using Google SketchUp, which you can download from www.sketchup.com.

Because it's intended as a sketch program rather than a photorealistic rendering app, it is very suited for this usage.



1 DESIGN ON PAPER FIRST

There are probably many artists who can begin in 3D without any initial thumbnail sketches and end up with a good design. Most of the time, I'm more aware of limitations when working in 3D apps than I am with a pencil and paper. I want the tool to serve me rather than vice versa. So my approach is to do the ideation on paper first, just to generate the initial ideas.



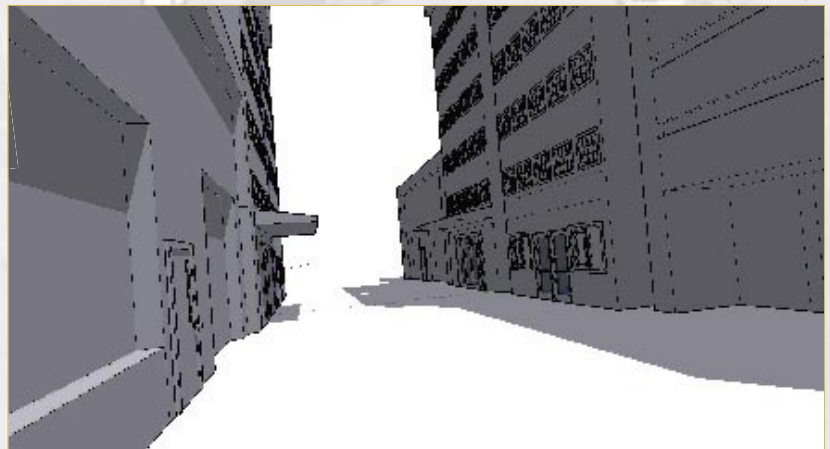
2 USE THE TOOL, DON'T SERVE THE TOOL

One thing 3D apps have is a lot of horsepower, and lots of ways to use it. One thing that 3D does really well is render space quickly and accurately. We can use that brute force to try out

different camera angles, making adjustments if necessary to compose a shot to its best advantage, showing key elements and avoiding tangencies. For complex environments, iterating through many different views is not always practical with pencil and paper.

3 CAMERA SKILLS

As human beings, we are accustomed to certain views, simply due to our eyes' physical properties. Because of this, there is a tendency for us to sketch spaces with a certain field of view, corresponding to how we perceive space. Being able to change 'lenses' or adjust camera options such as field of view and rotation enables us to present certain distorted views accurately.



4 REPEAT, MORE HORSEPOWER

Something that 3D programs are far more suited to than human beings is the ability to accurately depict identical, regularly repeated elements such as might appear on the side of a building. This is one instance where using 3D can actually be more freeing than working with traditional tools. Trying out different options for hundreds of columns and windows and so on, is not really an option when you just have a pencil and paper.



6 PROP LIBRARY

One nice benefit of using SketchUp (and probably a lot of other 3D packages) is that there are libraries of basic props and elements that you can use to populate and build out your scene. These probably should not be relied upon for the major elements in your scene, but for the peripheral stuff it's a great time saver.

7 MEASURE TWICE, CUT ONCE; OR, MAKE ONCE, USE MANY TIMES

Another instance where 3D can help you out is when you need to populate a scene with a lot of the same object. This is related to, but slightly different from, the situation where you have a regularly repeated element. In this case, you're more interested with the overall effect of an arrangement of pieces rather than the nuts and bolts of the piece itself.

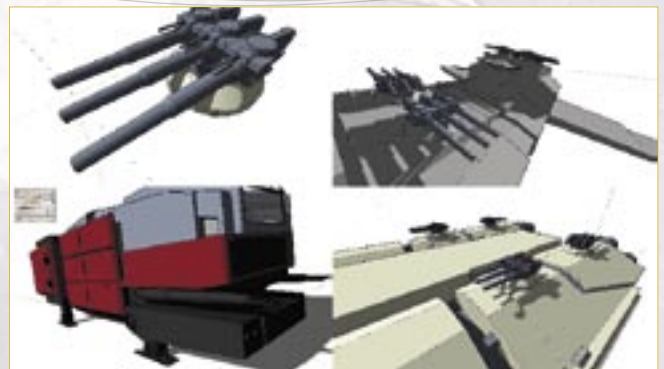


5 CAST SHADOWS

Another benefit of 3D programs is their accurate shadow casting. Again, this is something that a reasonably skilled artist can do by hand, but having the option of quickly making adjustments is an invaluable time saver. All 3D apps can provide this, but SketchUp's diagrammatic cast shadows enable us to easily blur edges, avoid tangencies, add colour or even change where the shadows fall in order to best serve the overall composition.

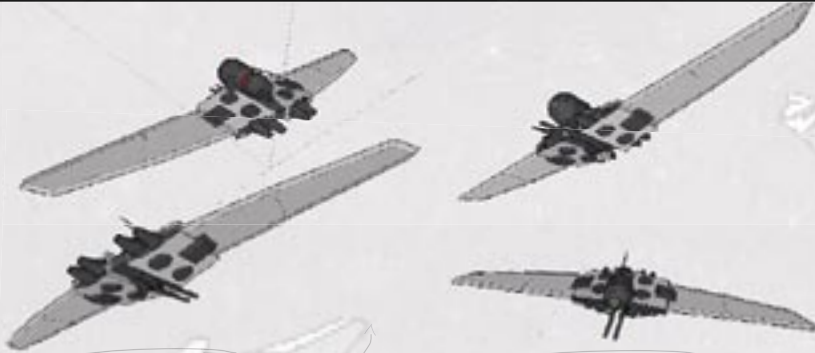


“It's helpful to build up an asset library of parts that appear more than once”



8 LIBRARY OF PARTS

In some instances (borrowing a practice from a typical 3D production pipeline) it's helpful to build up an asset library of parts that appear more than once. This is a different situation from the previous tip - in this case, it's a nuts and bolts approach, where certain mechanicals need to be shared across several different instances or locations. ➔

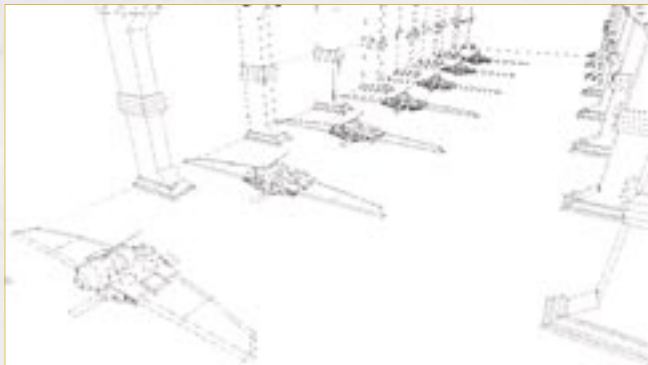


9 FROM ALL OVER

One aspect of the concept design process that I've talked about before is the issue of the design working from 360 degrees. Creating orthographic 'turnaround' drawings sometimes points out flaws or weaknesses in a design. Creating a quick mock-up in 3D can serve the same purpose. Being able to rotate a model around, to observe its silhouette from different angles can provide a good sense of the overall design of an object.

10 ANALOGUE STYLE

One of the nice things about SketchUp in particular is having the option of creating a rendered output that feels closer to a hand-drawn sketch. Choosing this option and leaving out colour, texture and lighting creates a very useful underlay drawing and gets you pretty far along in terms of creating a very hand-drawn/painted, analogue-looking piece.



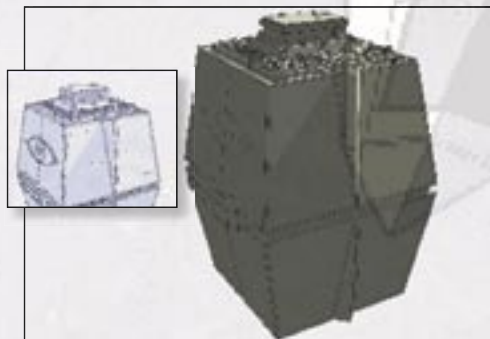
11 MIXING SOURCES

One area where (in general) 3D lags behind more traditional artistic methods is in portraying convincing or emotionally appealing human characters. By using 3D for the inanimate objects and relying on one's drawing and painting skills, we as 2D artists can enjoy the best of both worlds.

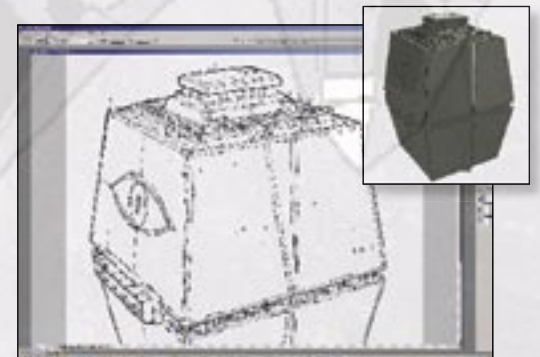
Step-by-step: Using 3D and 2D in a sci-fi scene



1 In this screenshot, you can see the rough SketchUp model, and the blue coloured render in Photoshop. I'm planning to use this same model in several different illustrations, so the added detail on the top surface will help with consistency.



2 I printed out the blue render and used it as a base to create the pen and ink drawing, which I scanned back into Photoshop. On the silhouette edges in particular, I wanted to get rid of some of the hard edges that 3D geometry creates.



3 By isolating the blue channel in the RGB Channels window, I can eliminate the blue underlay drawing and leave only the black ink line work. The line art is brought to the top layer so that colour applied underneath will not obscure it.

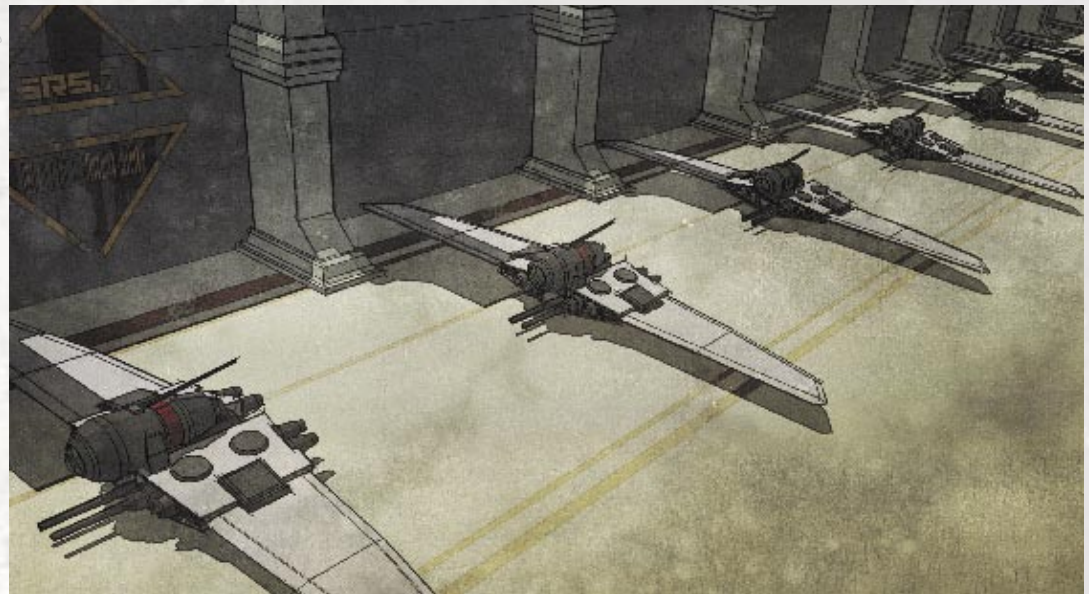
12 BORROWING FROM THE 3D PIPELINE

A good rule of thumb regarding the use of 3D is that you probably shouldn't reach the point where you are texturing models. It is possible however to adapt that technology in building up your 2D image. I will often overlay photo textures in the 2D image to create weathering effects or material indications. The extent to which you do that depends on how you want the final image to look.



13 GREEBLE

'Greeble' - which you'll also sometimes here described as 'greeblies' or 'nurnies' - is a term that's often used in concept design, and refers to dense detail that is placed in certain key areas, usually in spaceships or technically-oriented objects and environments. SketchUp's modelling tools enable you to extrude, stretch and move edges easily, which can be used to create greebles relatively quickly. This can provide a good basis for implying a lot of techno detail in your painting.



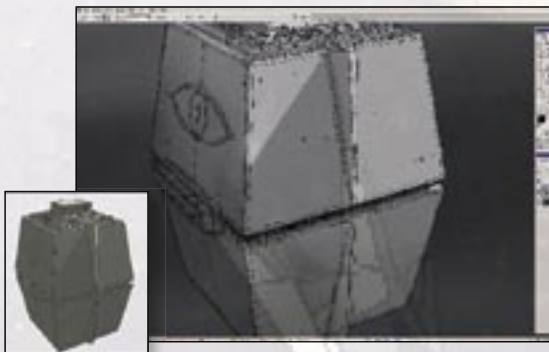
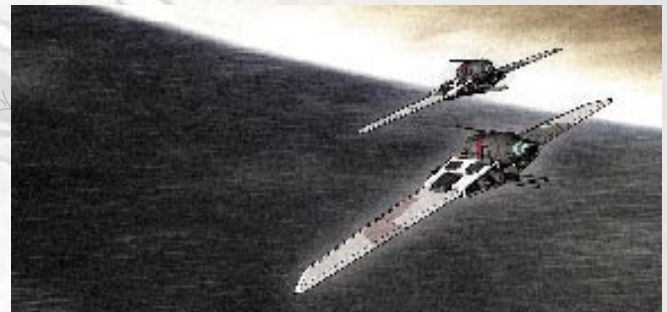
14 INTEGRATION

Once the models are built, there are lots of ways to incorporate them into your image. For instance, SketchUp's line art style of rendering complements the line work in some of my drawings. Using 3D for camera angles, lighting and shadows is a great time-saver.

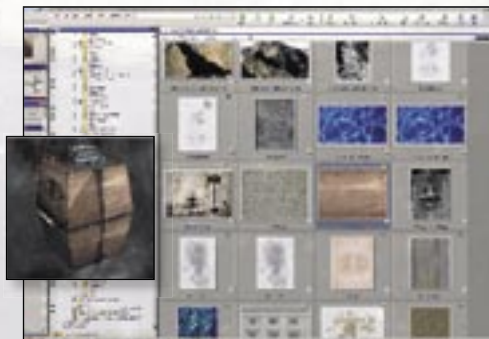
15 BACKDROPS

Another great benefit of combining 2D and 3D is that convenience that 2D provides. Creating an entire backdrop using 2D tools provides a lot more flexibility in terms of composition, effects, lighting, and colour palette.

“ SketchUp's tools enable you to move edges easily ”



4 In my SketchUp model, I adjusted the daylighting settings until I found a pleasing cast shadow pattern on the geometry. I use that as a guide for laying in the basic grey scale values. I use the airbrush to simulate radiosity effects.



5 Because the space station is a fairly simple geometric shape, it is a straightforward matter to bring in some photo textures on an overlay layer. Once they're in the file, I can use Photoshop's scale and distort tools to align the textures.



6 In this final image (still in progress), I've changed the colour of the station to match the cool palette of the environment. I brought in the squadron of fighter ships seen on page 95, and added a hand-drawn transport vessel in the foreground.