Hand drawn mini tutorial.

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Software:
Light Wave 3D

Introduction

In 2005 I finished my first short as both animator and director. It was called The Red Shoe and was made after a script by Anton Raukola and Håkan Rudehill (which whom I would later form the animation studio Bortbyting).

For the film I wanted a look somewhere between 3d and 2d, so I developed a technique using Light Wave 3D's edges, some displacement and motion blur to produce the look of the film.

The Red Shoe

Step by step

Make a tessellation *Ball* (Shift+O) in Modeler, leave *Segment* at 4. Hit tab to *Subdivide* it. Save and send to Layout.

Give the ball a white, 100% luminous surface, turn on smoothing and save it again. If you want to see what you are doing, it is advised that you set the luminosity as a 100% (white) gradient instead.

Go to *Object Properties* for the ball (Shift+O) then (p). Set the *Render SubPatch* level to 6. On the *Deform* tab, click the T next to *Displacement Map*.

A *Turbulence* procedural will work fine for today. A texture value of 0.01 should be ok. Set scale to 1mm on every axis. Click on the position tab and make an envelope to move the texture Y +100 meters on frame 1.

If you want the line work to crawl during animation, set *Post Behavior* to *Linear*, if you want it to be fixed, set it to *Repeat*.

Copy the texture and change *Blending Mode* to *Additive* and *Displacement Axis* to X, copy again and set *Displacement Axis* to Z. Close the *Texture Editor*.

Now you have the basis for the line work, but you lack the actual line. Go to the *Object Properties*, *Edges* tab, click *Silhouette Edges*, leave it at the default 1.0 pixels.

Change the color of the background to white. Press F9 and you should get this:
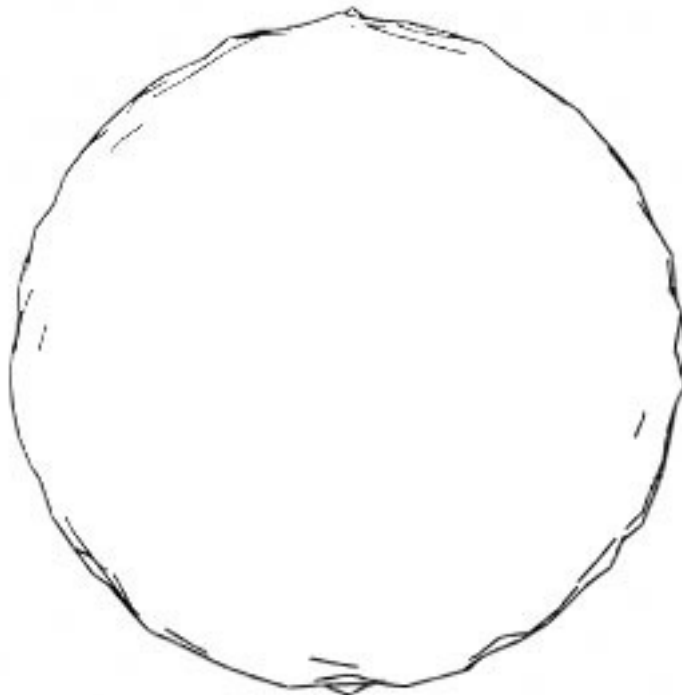
Because you haven't enabled any motion blur yet, all you get is a bumpy ball.

One more thing before you get that nice (kind of) hand drawn render. Go to *Camera Properties* (Shift+C) (p). Set *Antialiasing* to at least 5 and *Motion Blur* to *Dither* or *Photoreal.* Press F9. In a matter of seconds you will see this:
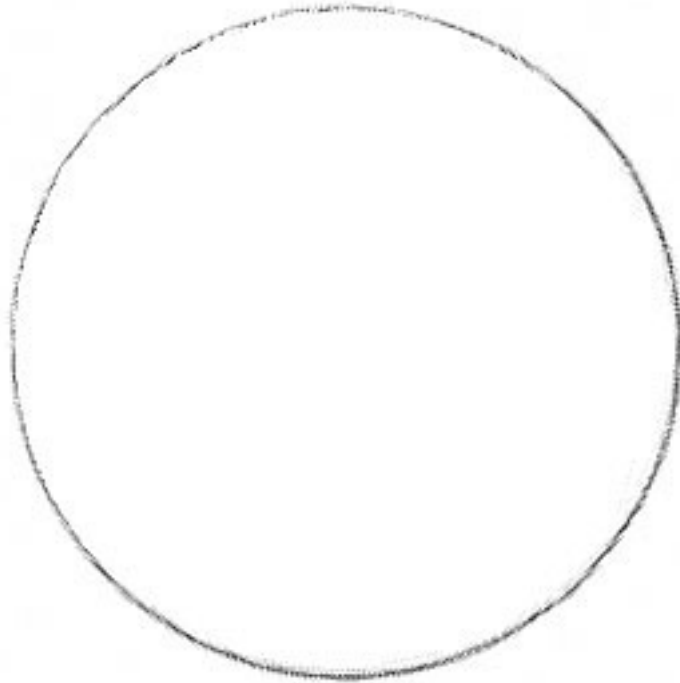
This looks way better.

You can sort of paint on objects by making denser geometry where you want more smudge.
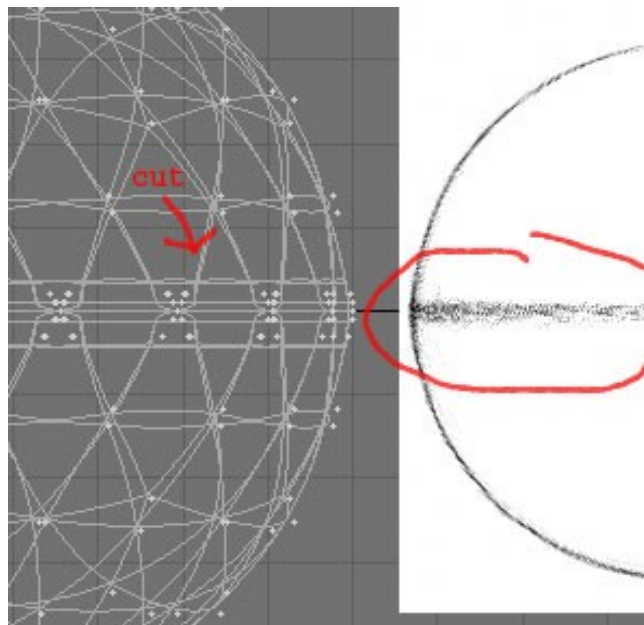
Denser mesh means more smudge.

If your object is really dense in one area, for example the hands, you can use a *Weight Map* to control the displacement in that area so it doesn't get to smudgy.

Conclusion

Combining this technique with toon shaders can give a nice, hand drawn feeling to pictures and animation (it also depends a lot on the animation and your models).

You could also try setting the displacement and the motionblur to much higher values for a more watercolor like look or try experimenting with other displacement textures.

If you have any comments or think something is unclear (English is not my first language), please send me an email and I will do my best to answer: magnus@bortbyting.com

For more tutorials visit http://www.bortbyting.com