# Mustache Tutorial

Hello, my name is Bryan Silva. I am a character artist who has had a few requests for a tutorial on how I created the mustache on my Danny Trejo model. This tutorial is going to cover how I used 3dsmax's Hair & Fur World Space Modifier and Adobe Photoshop to create it. The techniques discussed could very well be used for other hair on a character such as eye brows. What you will need to complete the tutorial is 3dsmax and a mesh with UV's laid out in such a way that you can paint a texture map easily in Adobe Photoshop. There are two ways of using the Hair & Fur modifier in max. I will only be covering one in this tutorial.

Creating base geometry for hair to "grow" from:
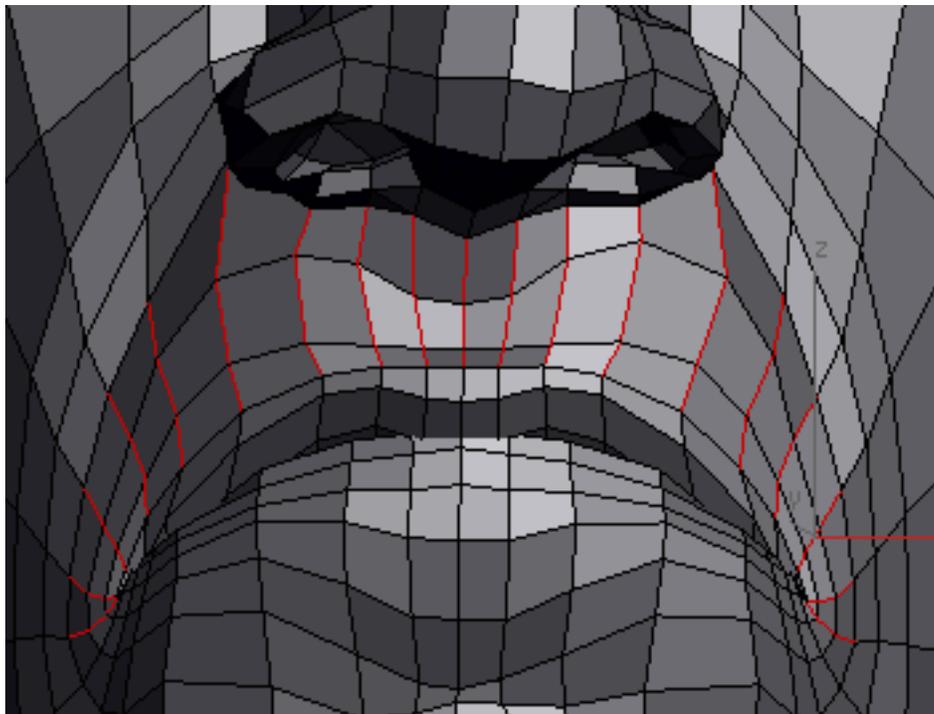
This is an image of the mouth area of the character I am creating the mustache for. I selected the edges of the upper lip region as this is where I want my mustache to be located. I then converted this edge selection to a polygon selection and detached the geometry as a clone.
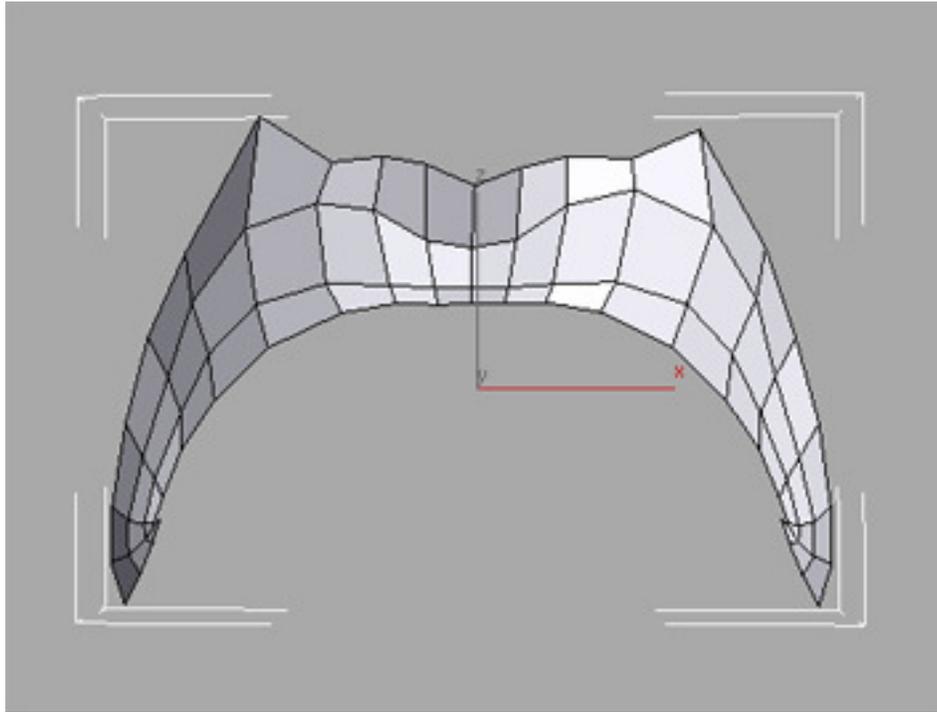
This image is the detached geometry that we will be using to grow hair from in 3dsmax. We must make sure that this geometry has UV's to utilize the mapping features of the modifier.
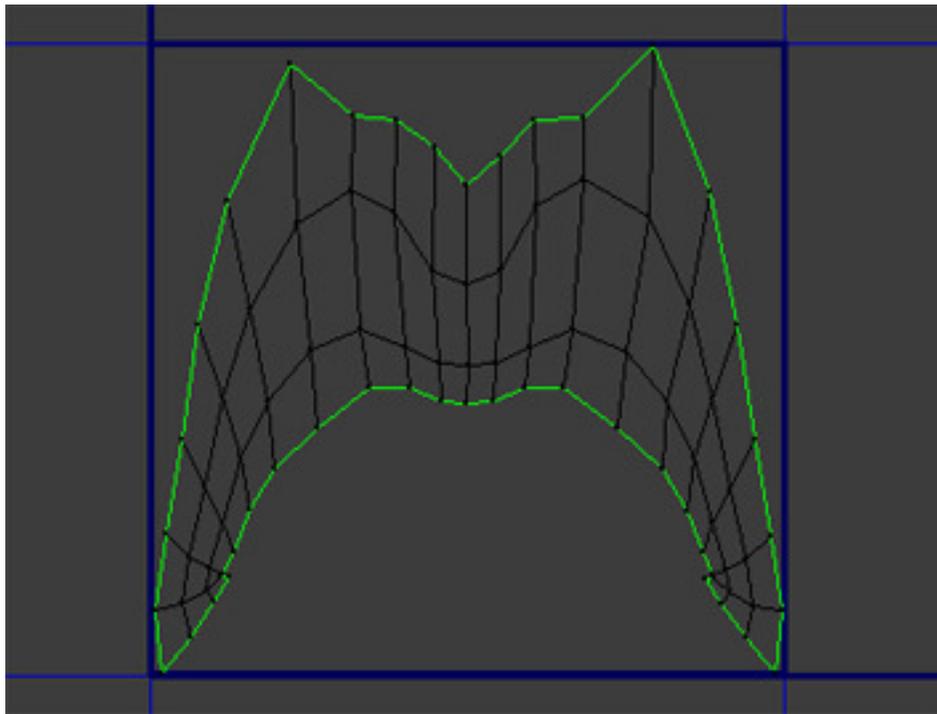

This is an image of the UV's I have created from the geometry. It was easily created using the "Quick Planar map" function in the Unwrap UVW modifier in max. I then use the "Render UVW Template…" tool insider the Unwrap UVW modifier's Edit UVW's window. It is located in the "Tools" menu. The outputted image will be used to paint on in Adobe Photoshop.
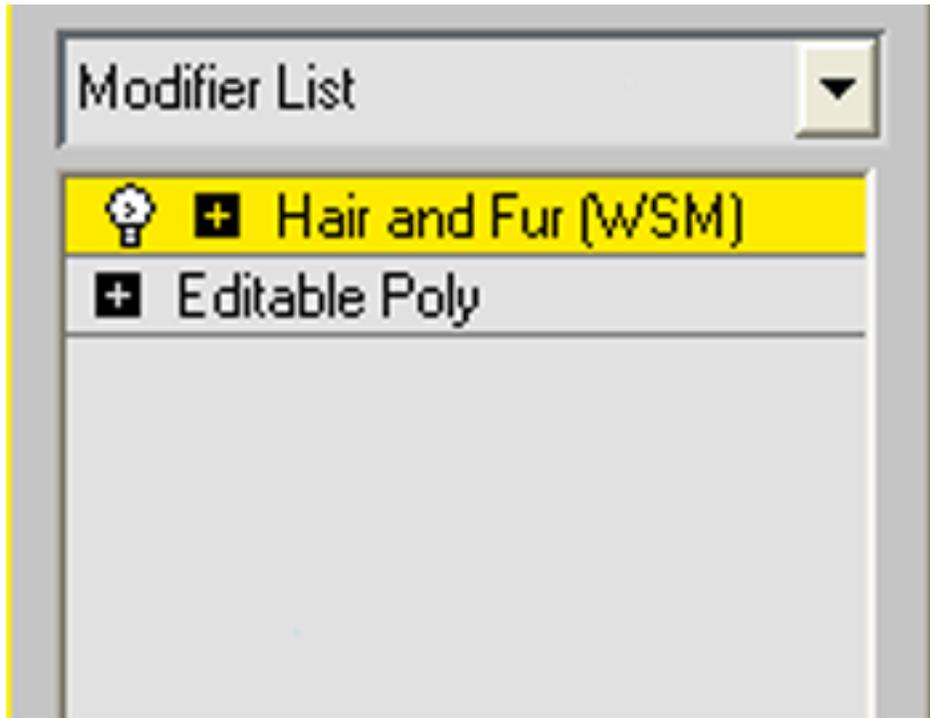
Next you must add the "Hair and Fur (WSM)" to the modifier stack in 3dsmax.
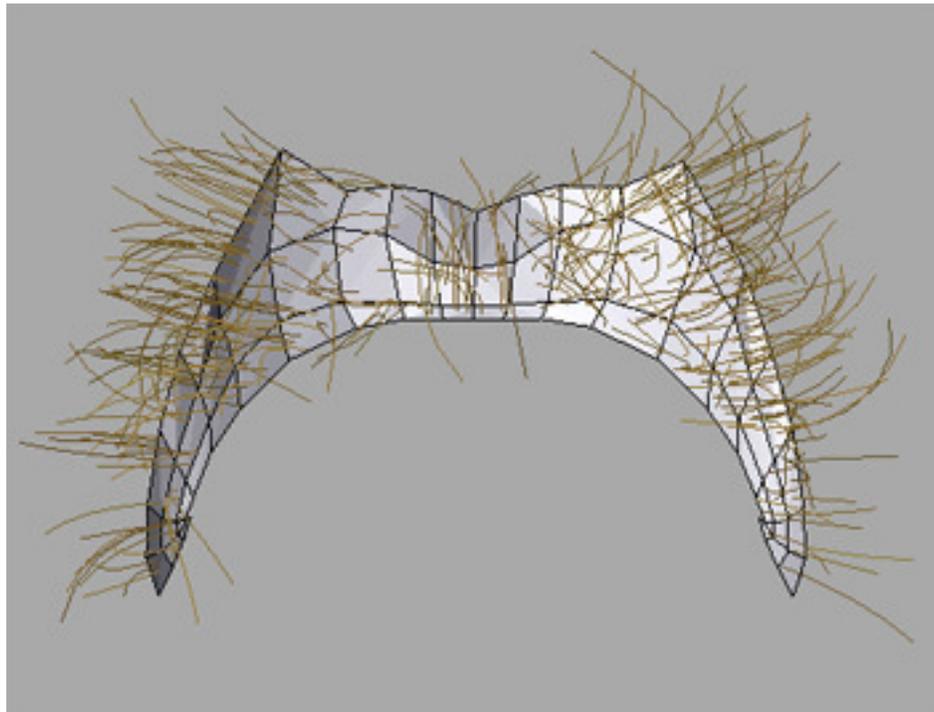
When you do this the default settings of the modifier produce the result seen above. Of course this is not ideal so we must find settings that will produce better results. We can start by letting the modifier know where we do and don't want hair to be grown from. We can do this by painting a simple map inside Adobe Photoshop.
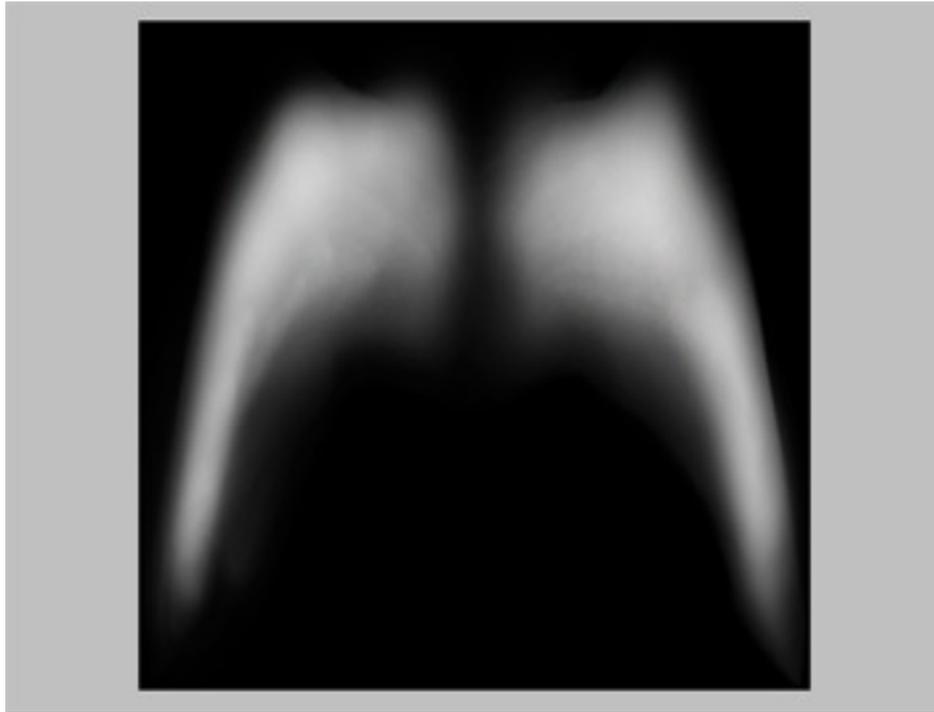
Above is the texture map I painted inside Photoshop to tell the modifier where to grow hair. It is called a Density map as it will be applied to the Density channel inside the Hair and Fur modifier. The way the map works is based on a grey scale. The black areas of the map will grow no hair and the white areas will be very dense with hair.
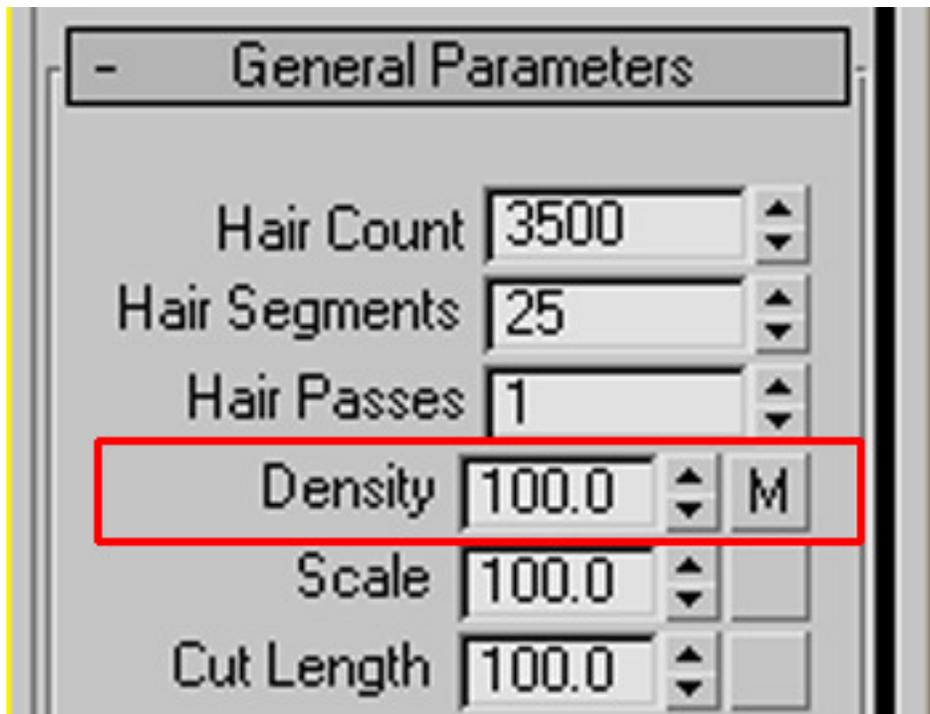
The red box shows where the map should be added. The result of the above settings is shown in the image below. This may appear alarming, but don't be concerned. You have not made an error in the texture map or any settings you have adjusted. 3dsmax is just trying

to conserve your memory for you by only displaying a percentage of the actual hair you have created.
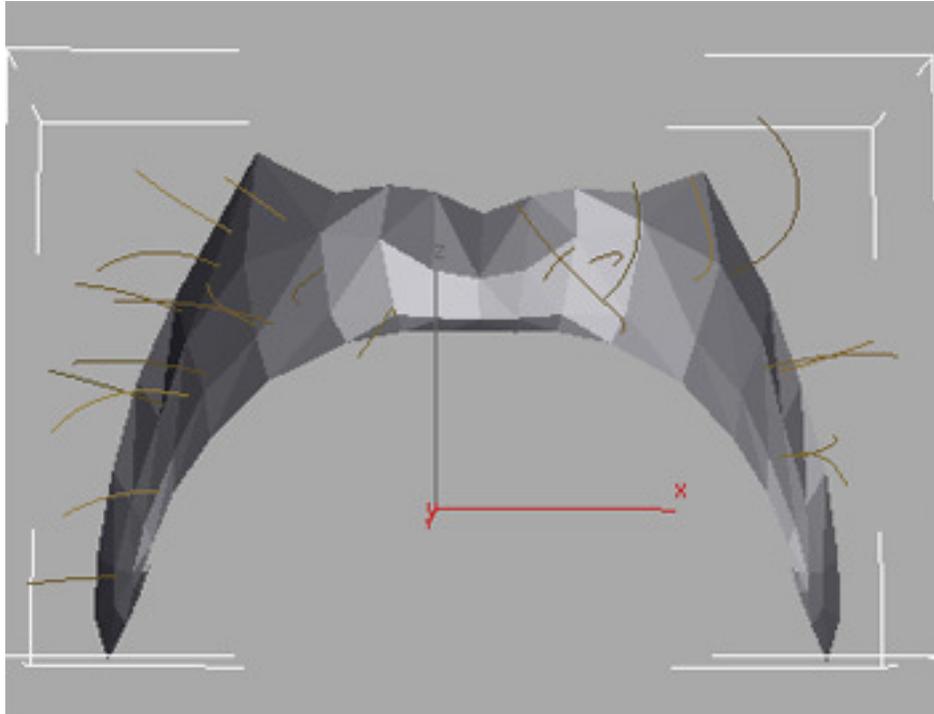
You can adjust this percentage with a slider at the bottom of the parameters in the "Display" rollout. The following image shows all the settings I have adjusted to create the mustache. You will have to use your best judgment to decide which values work best. For this particular character I chose to increase the Root and Tip Thickness as I will be later converting the hair to geometry and want it to be easily visible. I also added Frizz to the root and tip of the hair. This helps simulate the chaos of the characters mustache. I chose to also kink the tip of the hair just a bit to further simulate the chaos often found in mustaches of this length. The last things I adjusted were the "Display Hairs" checkbox, the percentage of displayed hair and the max hairs able to be seen. This way I was able to view the hair more accurately in the view port.

General Parameters

Hair Count	3500
Hair Segments	25
Hair Passes	1
Density	100.0 M
Scale	100.0
Cut Length	100.0
Rand. Scale	40.0
Root Thick	15.0
Tip Thick	4.0
Displacement	0.0
Interpolate	☑

Material Parameters

Occluded Amb.	40.0
Tip Fade	☑
Tip Color	
Root Color	
Hue Variation	10.0
Value Variation	50.0
Mutant Color	
Mutant %	0.0
Specular	75.0
Glossiness	99.0
Specular Tint	
Self Shadow	100.0
Geom. Shadow	100.0
Geom. Mat. ID	1

+ mr Parameters

Frizz Parameters

Frizz Root	75.0
Frizz Tip	35.0
Frizz X Freq.	14.0
Frizz Y Freq.	14.0
Frizz Z Freq.	14.0
Frizz Anim.	0.0
Anim. Speed	0.0

Frizz Anim. Dir.

X	0.0m
Y	1.0m
Z	0.0m

Kink Parameters

Kink Root	0.0
Kink Tip	1.0
Kink X Freq.	2.3
Kink Y Freq.	2.3
Kink Z Freq.	2.3

+ Multi Strand Parameters

+ Dynamics

Display

|	
☐ Display Guides	
Guide Color	
☑ Display Hairs	
☐ Override:	
Percentage	100.0
Max. Hairs	5000
As Geometry	☐

The following image shows the result of the above settings.
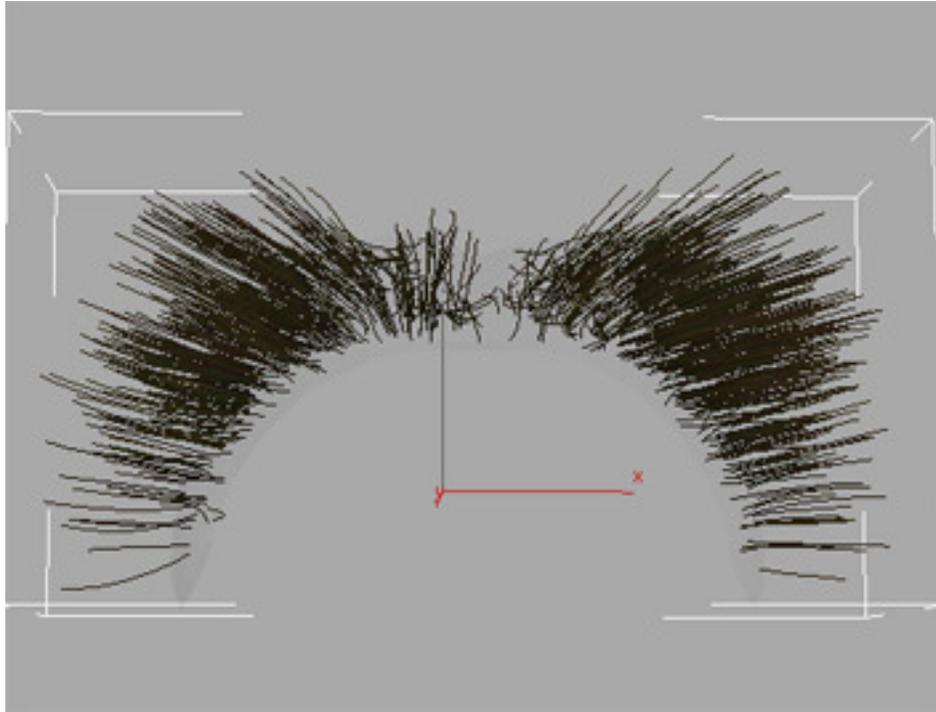
The only thing left to do is to use the styling tools to style the hair to your liking. You can play with the different tools available under the styling rollout to get a feel for what each does and how it works. Some important things to note is the buttons in the selection box of the rollout. They tell the Styling tools what part of the hair to affect. You can choose to affect the hair tips or roots or the whole strand. I find styling with the hair tips to be best for choosing to direction the hair should be and then affecting the root to lift the hair off the surface of the skin.
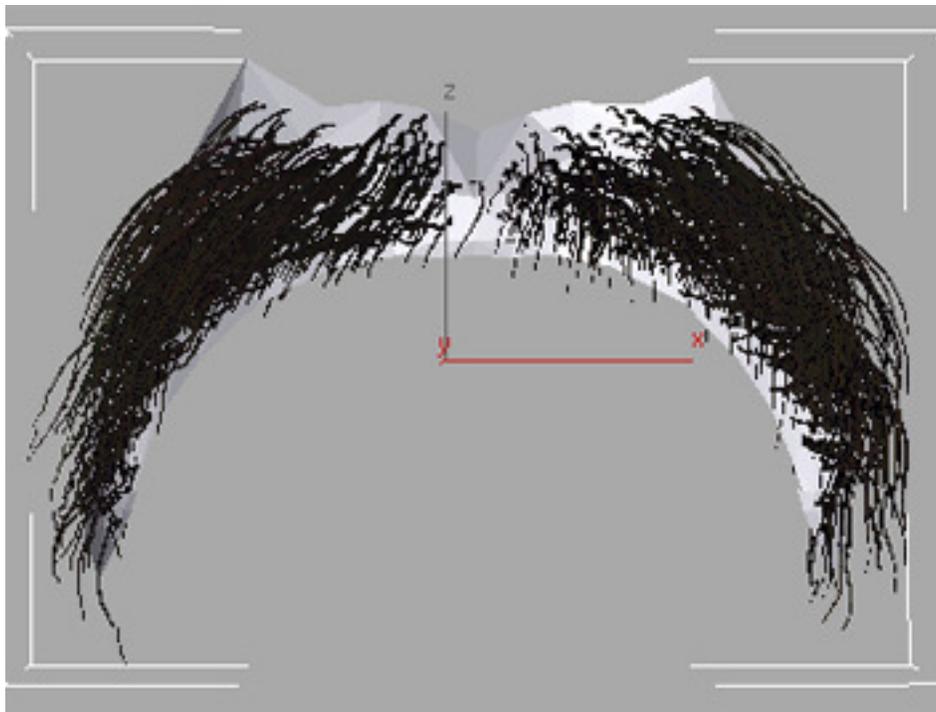
The above image shows the result of the styling I did on the hair. You can see the frizz and kink settings affecting the strands from root to tip. I am happy with the results so I will move on. The next thing you need to do is convert the hair to a mesh that you can them export to another package. In my case that package is Zbrush 3. The following image shows the button you need to use to convert the hair to a mesh. It is located in the Tools rollout of the hair and fur modifier.
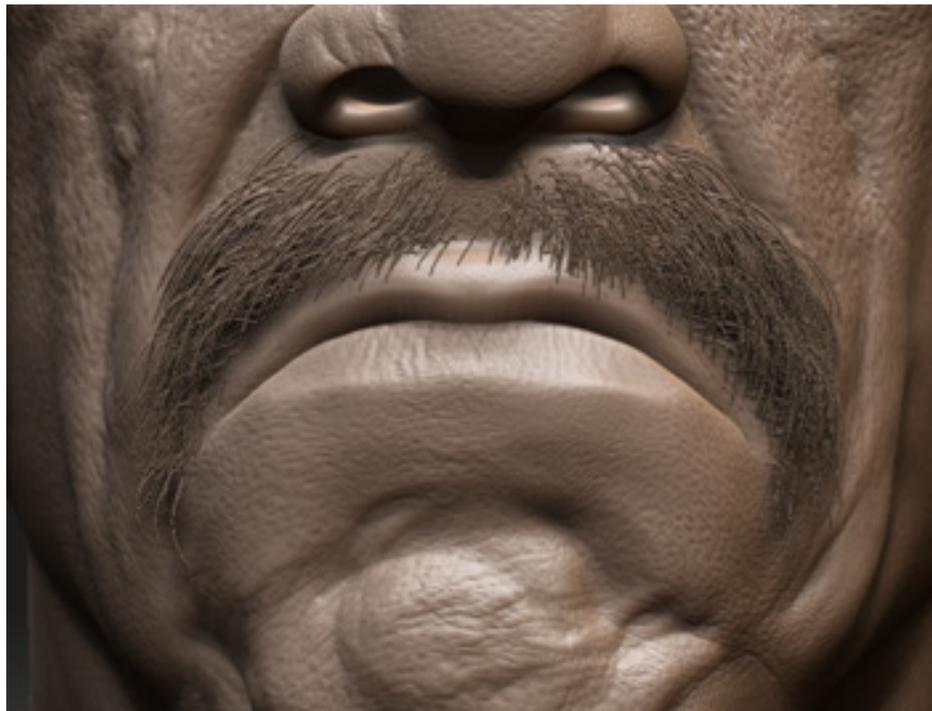
Above is the final result in zbrush 3. You can further tweak and style the hair in zbrush if desired. I hope you found this tutorial useful. If you have any questions don't hesitate to contact me a bsilva@maddocsoftware.com or bryan@bryansilva.com.