Subject: Field of view
Posted by HystericalParoxysm on Thu, 16 Aug 2012 08:46:21 GMT
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So I'm making a model in 3ds Max 2010, but I'm wondering about the field of view setting.

Left is my model at a FOV of 1 degree, and right is at the default in Max of 45 degrees.

I'm guessing the look of what I actually print will depend on how far the viewer is from the finished object as well as the size of it (the head will be about the size of a chicken's egg), but will be somewhere in between those two. I'm hoping I'm not going to end up with something that looks just like the picture on the left in real life... At least, I sure hope not because I'd have to re-model and re-print.

Anyone have any guidance about what setting I should be using for the best results?

Subject: Re: Field of view
Posted by rithmikansur on Thu, 16 Aug 2012 17:31:35 GMT
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The default 45 is going to be pretty close.

When I was in school they said that at 35mm lens is what you want to use if you want your picture to look similar to what the human eye sees. Now, I believe they're teaching that a 50mm is most life like.

A 35mm lens has an FOV of 54.4 degrees.
A 50mm lens has an FOV of 39.6 degrees.
45 degrees is in the middle there somewhere.

Subject: Re: Field of view
Posted by JACANT on Thu, 16 Aug 2012 20:51:35 GMT
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I think you are getting a litle confused. You only need the field of view command for viewing on a computer screen. The model does not change size in anyway, just your view of it on your screen.

Like orthogonal or perspective.
Export your file as normal depending on what format you require, see link.
http://www.shapeways.com/tutorials/supported-applications

Subject: Re: Field of view
Posted by stop4stuff on Thu, 16 Aug 2012 22:16:17 GMT
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TBH, when I read this earlier today, I thought, hang on aren't dimensions just dimensions and it doesn't matter what it looks like on screen - and then I was like, whoa, I suppose if someone is use to organic modelling on screen for screen there could be a big difference between what they're used to seeing whilst modelling and how modelling for 3D printing works out.

Sorry if not at all helpful

stop4stuffModeller for hireShapeways ShopTwitter

Subject: Re: Field of view
Posted by HystericalParoxysm on Fri, 17 Aug 2012 09:06:23 GMT
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rithmikansur - Okay, cool, thank you! I was really hoping 45 would be something like what I will end up with. I kept searching around trying to find info on this and couldn't. Your reply was very helpful - I'll stick with 45-ish and cross my fingers that it's close.

JACANT - I know the FOV doesn't actually change the model itself, but if you look at my image, it does change dramatically the way the model seems to look - without knowing what setting will get me closest to what I will actually be viewing in a print, I'm kind of flying blind. The aesthetics of how this head will come out in print is really important to my whole project.

stop4stuff - Yeah, that's exactly what I mean - such a big difference between the settings, and if I got a print that looked like the version on the left, I would be -really- upset (and also would have spent a substantial amount of money on something unusable to me). Strangely enough, the FOV setting only seems to affect my perception of the head/face - I can change it to 1 or 45 and look at the body I have modelled and it never seems distorted to me like the face does. Human perception is weird.

Subject: Re: Field of view
Posted by JACANT on Fri, 17 Aug 2012 17:34:48 GMT
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Why don't you just upload twice with each setting. One at 1 degree, the other at 45 degrees. I don't think there will be any difference to Shapeways.

Subject: Re: Field of view
Posted by HystericalParoxysm on Fri, 17 Aug 2012 18:54:34 GMT
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No, there won't be any difference with the model itself, as the model doesn't change. I know that - all I did was tweak the setting but the XYZ coordinates and so forth are unchanged.

But what I see of the model does change, as you can see from my image - the one on the left with a 1 degree setting looks much flatter than the 45 degree one, and protrusions like the nose and lips look different in size and contour.

My question was essentially "which setting to use to get the most accurate print?" because I would be very disappointed in the result if I printed it and it turned out to look more like the 1 degree picture when I hold it in my hand in real life. If that -was- the case, I would need to change the model's contours which would affect the print.

rithmikansur's answer was pretty much what I was looking for - that is, what FOV setting is correct for what the human eye sees.

Subject: Re: Field of view
Posted by JACANT on Fri, 17 Aug 2012 19:15:53 GMT
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Open your stl file in Netfabb http://www.netfabb.com/basic.php
WYSIWYG.

Subject: Re: Field of view
Posted by HystericalParoxysm on Fri, 17 Aug 2012 19:44:51 GMT
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That viewer seems to display my head at about the same setting as the 45 degree setting in Max;

maybe -slightly- different, but not by much.

Subject: Re: Field of view
Posted by Fredd on Mon, 27 Aug 2012 18:46:01 GMT
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You also might get a rather rude surprise depending on the material if you used smooth shaping on the model. You have more liberties with a modelling program for renders/animation clips than you have getting a properly modeled mesh for 3D printers.

Subject: Re: Field of view
Posted by HystericalParoxysm on Tue, 28 Aug 2012 07:00:27 GMT
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How do you mean, Fredd? I have been modelling under the impression that, for 3d printing, (generally) more polys = good, as 3d printing doesn't take into account things like normals/smoothing groups - only the location of the actual polygons/vertices in the file.... But that using a smoothing modifier to add additional polys and then exporting the smoothed result would get a decent print.

I am a low-poly modeller by nature, so, for example, before smoothing the head I showed is about 6k polys; after (at my "I can view this without crashing 3DS Max setting" but not necessarily my "final, export for printing" setting), it's about 99k.

Subject: Re: Field of view
Posted by Fredd on Tue, 28 Aug 2012 17:50:17 GMT
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Sorry HP no idea you were experianced, and had applied a smooth mod beforehand. Sometimes people new to getting a model ready for 3D printing think the render view is what the final printed result will look like. I agree with you more polys in a proper model does give better results.

Subject: Re: Field of view
Posted by HystericalParoxysm on Tue, 28 Aug 2012 18:27:21 GMT
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No need to apologize - I just had a minor moment of panic going, "Wait, I could have sworn I read about this..." but it's good to know I'm doing it right. I think if I was making a fundamental mistake that required major reworking/starting over, I'd have to go lay in the road.