

SUBDIVISIONMODELING.COM

a sub-division modelers primer

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Organic modeler



Join Date: Jan 2006

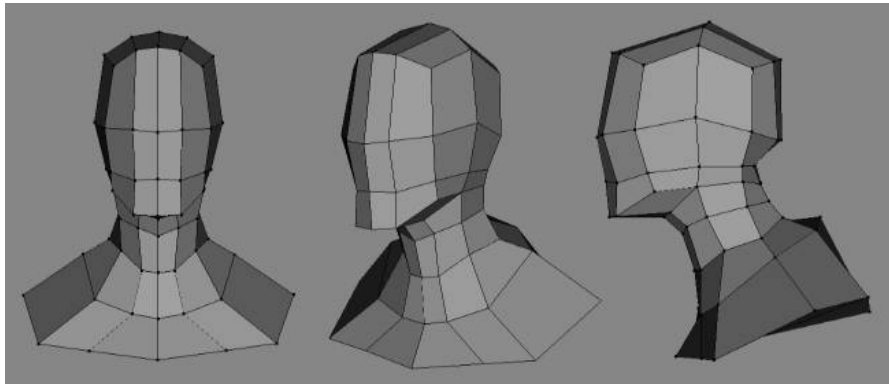
Posts: 65

The Form

There are many methods to modeling and they all have its good and bad so there is no such thing as "The best method". The reason why I have decided to go down this form path is because it works and plus I've always wanted to become a sculpture. I like to block out things before I jump right into the detailing and I got this far because of it and so I've decided to write this thread to help those that are new to 3d modeling and to show them the map of form before they decided on what they would like to do.

I first started out with the head form and it was very frustrating because I was trying to do it without any references, just pure imagination. Instead of blocking out the form my mind was occupied by these questions:

How many cuts? Why? Where and When? Not only that but I was also worried about the eyes, nose and the mouth (and I'm not even there yet). My mind was blank, unsure of where I was heading until one day I managed to blocked out the basic head from a box and behold, the moment of **Eureka!** I was very excited and decided to do it again! and again and again until I got bored and tired of it.



Looking back now it seems so basic and simple. All you need to do is create a box and make a few cuts and tweak! Now, if it's that simple how come I struggled with it? Shouldn't we all be able to do it without a problem? Well yes if you have the *mentality* for it but I didn't when I first started. What I've learned now is that when we learn 3d modeling we are not really learning 3d at all! What we are really doing is searching for that "Mentality" so if you're having trouble with something is it not because you don't have the skill or knowledge but because you don't have the required mentalities to do what you're doing. Once you have the mentality your senses will take over and you will do things naturally and so it is the first thing we will try to build - a mentality.

Mentality

Drawing the profile: Connecting the dots

This is a little exercise to help you build the mentality.

Look at that image for a moment and what we're going to do is draw the profile with points and connect (Connecting the dots). If you have two points to draw with how would you go about it? The answer is: Forehead to Chin because there is no other way. However as you increase more points they not only allow you to shape the profile more *accurately* but they allow many ways to do it and this leads to *styles* (Artistic). This is important to keep in mind when you need to make cuts and when you need to round them out. (animal.avi in the zip)

KeyCut and FillCut

At first I had a hard time understanding where I should cut and how many when creating forms so I searched for a metaphor and that metaphor is "animation". In Animation there is a concept called Keyframes which represent key poses then you have another concept called In-between frames which fill in the rest to complete the sequence. This not only speed things up but made them easier. The more In-between frames (FillCuts) you have the more smooth and accurate the motion will be. Since you are an animator you have the power to control how many inbetween frames there will be, this is similar to slicing polygons in 3D. Drawing a lot of in-between frames and managing them all can be tedious, in 3d moving a lot of points can be tedious.

The idea behind Keycuts is joints. When people block out their forms they start with KeyCuts and they always look blocky. If the software you're using supports bones you can do it now and bend/twist it to see your blocky form in poses. Once you have all the KeyCuts you have two options:

1: Smooth it out

Sometimes I just make KeyCuts and let the subdivision code take care of the Fills. The problem is that it doesn't look realistic.. so what you have to do is use soft-selection and tweak it (reshape it). Sometimes this can save a lot of time (depending on what you're modeling).

2: Fill it manually

Most of the time I prefer to do things manually because I can control the number of Fills and where they should be.

Keep in mind that this Key/Fill concept is not just for creating forms but for detailing your meshes as well. KeyCuts and Sudiv fill is one way of optimizing your mesh (Buttock, Thigh ect..). Also, sometimes a Fill can become a Key and it all depends on how you look at it. You're an artist so use your judgement. Interestingly enough, this concept also works for Topology/Edgeloop.. [KeyLoop/FillLoop].

The Key and Fill is a very interesting concept because you can apply them to almost anything! The next time you look at a topology wireframe try and find the keyloop because all heads have one. So far from what I've seen there are: Cloop, Xloop and Eloop topologies (There are much more). More on this in the future and for now let's stay focused on the form.

NOTE: If you're unsure of how many cuts to make for your model have a look at my blog.

Rounding

This is the most common mistake that beginners make. They make KeyCuts and then Fill in by slicing it and just leave it there... If you do not round out your Fills then the result will look squarish later and you will have a hard time making it look good. Every times you make a Fill round it out right away and you do not need to be perfect in doing it.

Following the Flow

Another common mistake is not following the flow of the subject. Remember that this is organic modeling so try to think organically. When you block out things like tail or body that bend try and imagine bending a Cylinder.

Fear, Rush an Doubt

This is more of a mental state problem when you first started out. When you're doing anything for the first time you will always experience great difficulties. The thing is that you must not give up because everyone goes through it. It's rare to find someone who come forth and talk about how they suffered so my advice is: Take it easy and slowed down there is no need to rush. Try and spend about 1 or two months playing with forms and start with a subject that allows you to make mistakes like creatures and just practice. If it sucks delete it and start all over.

At first you will do things a bit slow and as you do it many times it will speed up since you've done it before and this is the reason why we practice, to get better and faster. Also, there is something very funny when you create form for the first time and that is the "overall look". Take human figure for example, let's say you started with the torso and extruded outward. If you don't have the leg and arm/head yet the whole thing will look funny. For it to look like "human" you must have all the parts in place so don't be turned off by the horrible result (not having all the parts). You just need to extrude all the parts and tweak them into the right places then it will start to look like a human figure.

Doing it

The Subject

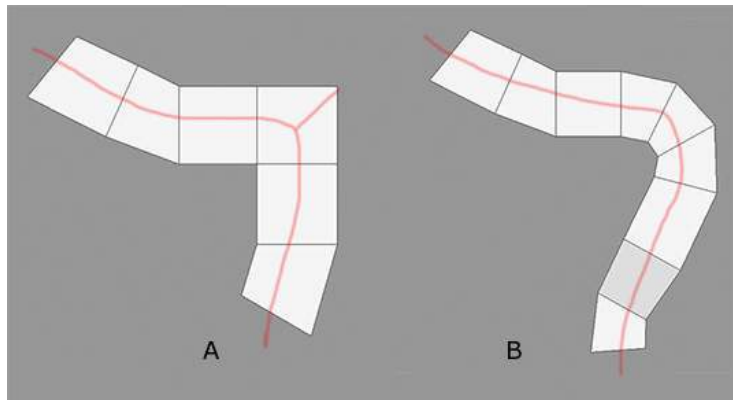
First let's talk about the subject.

If you're into characters modeling obviously you will start with the head and work downward. The general head the body and then the hands and feet. Over a few weeks you will find the head to be the easiest because it's just one block right in front of you and all you need to do is zoom in and out. The body will get a little difficult since it requires that you rotate/zoom the model and people who are new to 3d are not used to doing all the spinning/rotating and zooming. To avoid headaches try and use references and once you got a hang of doing it try doing it from memory. Creating the hand form from memory for the first time is tough so it's best to practice it with references then do it from memory later. The reason for doing it from memory is to see if your sense on the hand form or whatever that you're creating has improved. As of this writing I can only block out the head and body, I haven't got to the hands yet and it's something I will practice later down the road.

If you're into creatures modeling it's the same thing. Start with the head then the body and work outward. Don't limit yourself by practicing just one you can jump back and forth between the two like I did.

Here is a [zip](#) that contains 3 AVIs (xvid requires) just to give you an idea. I'll do lengthy timelapses in the future when my computer can handle it.

Extrude



Before you go on extruding areas like the arm and leg keep in mind that there are only two ways to do it and this has to do with how you shape the corner. Method A is faster but soon or later you'll end up with B (You can convert A to B via a method called UnPolling), also notice the flow (red line). For realistic human arm I've seen a lot of method A while B is for non-realistic like cartoons ect... If you're too lazy to rotate each time you extruded then use method A but it doesn't really matter that much since you can convert between the two down the road.

And that concludes the *first part* of this thread. For now if I had you confused you can ask questions.

[The best example on Form](#)

[Another one](#)

Last edited by SomeArtist : 02-14-2006 at 10:45 PM. Reason: added another example of form.

QUOTE

QUICK

02-14-2006, 09:23 PM

#2 



Adam
Super Moderator



Join Date: Jan 2006
Location: Going up Camborne Hill, coming down!
Posts: 1,251
● ● ●



Thanks SomeArtist,

that is a great post. This one is going to be a sticky. 😊

Adam

QUOTE

QUICK

02-14-2006, 10:20 PM

#3



Norman
c0d3r - Silo Modeler



Join Date: Jan 2006
Location: Iowa
Posts: 347
● ● ● ●



WONDERFULL!! This is on my bookmarks!

LW and Silo Modeller

Dabbled in ZB and Blender

<http://dave.bates-online.com>

QUOTE

QUICK

02-14-2006, 10:26 PM

#4

jwvanderbeck
CG Student



Join Date: Jan 2006
Posts: 72



Awesome! I must make a note to read through this when I get a chance.

- John Vanderbeck

- <http://www.jwvanderbeck.com>, Galleries, WIPs, and Blog

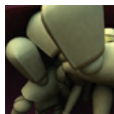
- Be a fly-on-the-wall and follow a rank amateur on the journey from CG student to industry professional at [my blog](#)

QUOTE

QUICK

02-15-2006, 01:48 AM

#5



Pablo
SDM User

Join Date: Jan 2006
Posts: 28



Hi SomeArtist.

I'm really pleased you're here! Your thoughtful posts always seem to open my eyes to something new. This thread is going to be sooo good... can't wait!

Pablo

QUOTE

QUICK

02-15-2006, 02:07 AM

#6



Jeremy
Super Moderator



Join Date: Jan 2006
Location: Florida, USA
Posts: 1,310

Excellent! Thanks for this SomeArtist.

Signed,

Your friendly neighborhood Moderator.

QUOTE

QUICK

02-15-2006, 06:18 PM

#7

Lummo

xmine

Vert Herder

Join Date: Feb 2006

Location: Orlando, FL, USA

Posts: 16

Excellent Post. This the really the stuff that makes forums great. It's really good to see the inner workings of someone's approach to modeling. Please keep posting 😊

QUOTE

QUICK

02-15-2006, 08:19 PM

#8

Toontje

Bachelor/ Ingenieur

Join Date: Jan 2006

Location: Bonaire N.A.

Posts: 73

That is great! I've seen so many tutorials, but they never tell you WHY, only HOW.

Keep up the good work!

QUOTE

QUICK

02-15-2006, 09:04 PM

#9

Abraham

SDM User

Join Date: Feb 2006

Posts: 10

Thank you very much, this is really an excellent and very informative article 😊

QUOTE

QUICK

02-16-2006, 12:20 AM

#10

southern

Instigator

Join Date: Dec 2005

Location: UK

Posts: 681

Keep it up SomeArtist. You have a very refreshing take on things. I've never seen things in the way you describe them to be honest and I find it inspiring to hear new ideas on old topics. Very cool threads heading this way...

SOUTHERN

Admin

<http://www.southernmfx.co.uk>

QUOTE

QUICK

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