

PRODUCTION NOTES

Subjective / secondary/ accidental/ extrinsic

working title: **Colour and Light**

working with colours and ramps...

will try to work fast and do an experiment each day or each two days of work.

Some starting by playing/exploring eg. python code (and allowing the exploration process to “suggest intent”), some starting from a way I know and remaining open to unforeseen opportunities.

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00_04_13

Aims and intent at outset of work session;

General steps;

Processes, tools, and techniques used;

Unusual (less common) processes, tools, and techniques used;

Problems arising during production;

Welcome surprises arising during production;

Questions arising during production;

Thoughts arising during production;

Summary;

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24_04_13

Aims and intent at outset of work session;

- create an animation that captures the sensation of passing cars.

First animation uses the ramp shadow “blur” and “interpolation” attributes.

start subtle and with each car add more wierd ramp movement.

- maybe add some twigs to the top of the tree, or a foreground or midground shape.

General steps;

- I made a few variations of a 200 frame animtion. Cars move through the scene and change the lighting.

Processes, tools, and techniques used;

- ramps within ramps; layered textures; layered shaders; projected textures; UV textures; expressions linking textures to controllers (to be centrally controlled)

Unusual (less common) processes, tools, and techniques used;

Problems arising during production;

Welcome surprises arising during production;

- I was able to introduce colour by using the offset time function in expressions which illuminated the tree trunk

Questions arising during production;

- ways to introduce colour without assigning coloured shaders...

- could all objects have the same shader and different expressions so that they react differently (a figure is what we differentiate from the BG).

- I sort of feel like my work needs a story and I'm wondering if the story could be the theme of my research? i.e my research is about knowledge, (maybe the body?) could it be about a painter and a 3D animator? It is about translation (interesting how translation is a word for moving things in 3D).

Thoughts arising during production;

- make an animation where the colour appears only through altering RGB values (start with black and white).

- try inverting the blurry BG

- try offsetting expressions like this;

```
int $timeoffset =4;
```

```
int $Time = (`currentTime -query`) - $timeoffset );
```

```
ramp7.colorEntryList[0].colorR = `getAttr -t $Time LIGHT.lightTree `;
```

to achieve flashes of colour

Summary;

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23_04_13

Aims and intent at outset of work session;

I am looking at the image that I created yesterday. It has a style of its own that is starting to emerge.

Next I intend to;

- get rid of (or change) the foliage because it doesn't suit the shadow
- hook up some ramp colour input colours and positions to show changes in light source and changes in crispness (detail / visible differentiation) of form.
- I also think it needs an overall tonal treatment.

Problems arising during production;

I decided to open the scene in Maya 2013 so that I can use the Node Editor to make connections (specifically to link up the "crispness control". Annoyingly the scene gives very

Welcome surprises arising during production;

- surface shader transparency works in a strange way...

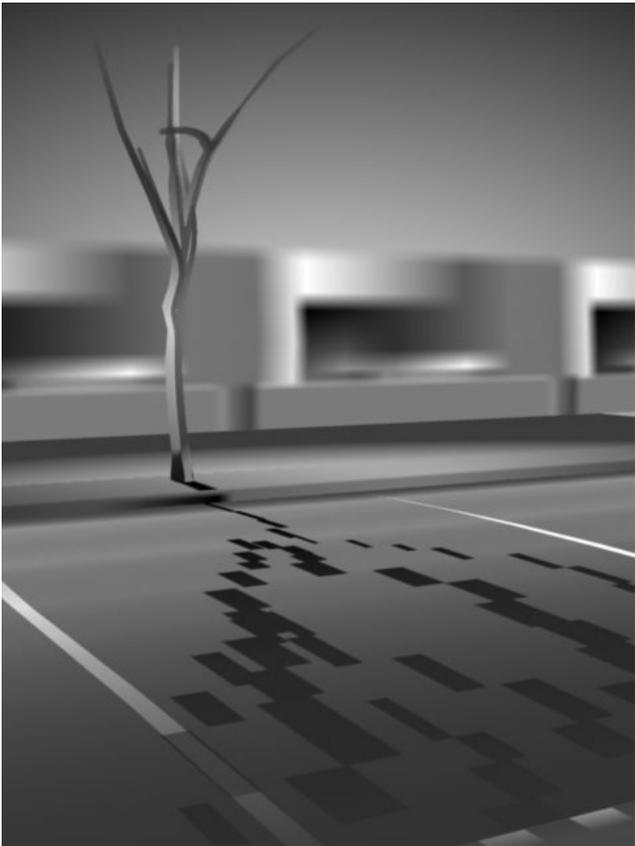
Thoughts arising during production;

- Add transparency to the plane of buildings
- My experiments are about ways to stay focused on the image as a whole (the big picture); ways to work from the general to the particular, and not get bogged down in detail ; and not get wedded to an initial intention / idea.

Summary;

- several interruptions but overall engaging. Felt like I was able to play with the connects I have built up. Many surprises and new ideas.

As I'm leaving I'm thinking of the projected texture feeding into the colour gain of BG buildings. should I duplicate the plane and use that on the transparency (perhaps invert for transparency of the blurred plane).?



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22_04_13

Aims and intent at outset of work session;

working with limited colour at this point (I might do a quick colour/ shader test).
I am keen to test out my latest shadow making script.

Problems arising during production;

- I cant translate the ramps sideways via the 2D placement node of the main ramp. answer is to use the placement nodes of the Vramps (a bit annoying to select them all)

Welcome surprises arising during production;

- I just duplicated the tree model and moved it a bit to one side. I applied a new surface shader and darkened the LT via a multiply divide node. It works well as a shadow and can be moved around with the changing light source.
- using a series of ramps to create the impression of buildings in the background. Its a bit like painting with a limited type of brush (perhaps a flat one). I'm making it up as I go along which is more interesting than copying a picture.

Questions arising during production;

- would it be interesting to constrain myself to only procedural texturing? it might allow unexpected animation opportunities.

Thoughts arising during production;

At the moment it feels very tentative. Should my moves be bolder? more dangerous?

- would negative space (shapes) be useful?
- at the moment its all very smudgy. would it help to introduce texture?
- I am also sort of working across the image; from one object to another. Would it help to assign the same shader

to multiple objects to start with? so keep working from general to the particular.

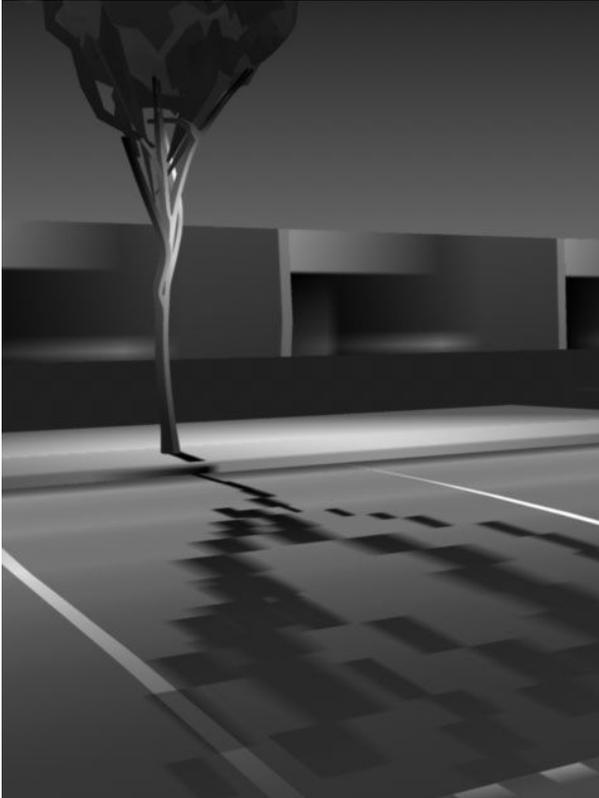
- what if I only used default ramp colours?

Summary;

next day - despite a lack of sleep the previous night, I was engrossed in my work yesterday. I enjoyed using the ramp shadow script and playing with the results.

The offset on some of the ramp Texture Placements put sharp edges on the road, therefore this is where I placed the white road lines. I particularly enjoyed the ease of making the row of background buildings (a simple plane with ramp textures linked to one surface shader).

I did have a headache at the end of the day.



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21_04_13

Aims and intent at outset of work session;

Try using my ramp script to make an interesting tree shadow. I feel like my previous attempts were uninspiring. The shapes aren't as interesting as the actual shadow. The nuances of texture and colour are missing and there's nothing to take their place (ie. no added level of interest emerges from the abstraction, from the technique I have used). But I don't want to give up just yet. ...

Issues with the script as it stands;

Z position doesn't quite work (it seems to make the shadow half as wide). For the moment I will try with the UVs moved to compensate - or I could tweak the script...

General steps;

have decided to use UV placement node to alter Z pos of ramp.

I'm now wondering if I can offset on U for position of curve also?

I'm enjoying the challenge of revisiting the code but am not sure if I'm wasting my time.

How to go from excitement of personal discovery to exciting image?

Thoughts arising during production;

A general thought about my project -- its almost an argument against collaboration (lost in collaboration). Its about creating surprises for yourself, but somehow the surprises are not random; are they emergent (in the sense that something emerges/ it kicks into another gear/ becomes a new animal, no longer shades of grey).

- I could connect the attributes for zPos of placement offset...cant use connectAttr because cv position is not an attribute. cant easily constrain a locator to a CV either :[

So I will leave that idea and If i want to animate the shadow i will do so in another way

- be good to add a falloff control

- be interesting to create a random variation for each input and then vary the ramp accordingly

Summary;

I'm happy with my progree with the script, "rampTextureShadow16.py"

It has the following features;

Z position

a controller for Main controllers called BLUR

a controller for type of Ramp

GENERALLY speaking I have learnt the neccessity of defining functions; breaking my script down.

Goran spoke of 'refactoring'.

He said;

dont be afraid to break the code

dont change things in the code if it can added as an argument

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19_04_13

Aims and intent at outset of work session;

Looking at 'nightTree_007blinding'.mov - this achieves a degree of atmospheric qualities. It might be good for the BG to go black when the blinding cars go past (and I think there should be more cars, passing in quick succession) overall its too minimal. I would now like to add texture (and more models) to the scene to make it more subtle, like an eye searching around the dark landscape.

I will be looking for ways to pay attention to 'edge quality'. and will be making notes about the possibilities for animation that I find.

I have decided to try using limited colours.

General steps;

start by laying down background colour (0.1,0.15,0.25).

- maybe duplicate BG colour and deviate from that...

- maybe use just a few ramp colours and mix them differently in layered shaders. I will try that as a starting point.

This might replicate the situation when you paint (the way that you put colours out on the palette and then mix them).

Processes, tools, and techniques used;

Unusual (less common) processes, tools, and techniques used;

Questions arising during production;

a computer crash. how annoying....a freeze...a frustration

Thoughts arising during production;

- I am after more from less

Summary;

not

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16_04_13

General steps;

I finally got my ramp striated shadow script working well enough to use for night tree production ("rampTextureShadow8.py").

I was feeling bored and frustrated until I decided to play around with attributes of the "main" ramp (eg. interpolation, ramp type, etc). I will render out a series of short clips. I'm interested in the unpredictable, but possibly interesting, visual results.

I want to set up the scene render flags so I have a folder for each set of images....

Opportunities arising during production;

-I just realised that I can change the driven keys that I have set to make the blur act differently; i.e. to change the relationship between the main blur cntrl cube and the local blur cubes. The relationship I have tweaked to that works is blur cntrl = 1, and others range from 1 - 0.6.

Thoughts arising during production;

- It would be good to hook up the width and width mult to a cube controller. i.e. I could probably set driven keys retrospectively.

BUT it is workable as it is so I would now like to introduce the Z axis to get wobbles on the tree.

Trying to set it up based on Z pos of CVs but I am failing. Can do Pos0 and Pos1 but cant get 2 and 3 to follow. I am now thinking to creat a cube and linking to it. I now realize that it might take another ramp or something...

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15_04_13

summary;

I spent most of yesterday (15th) working on a script to generate a series of ramps. I have imagined this striated tree shadow but havent quite got far enough to try it out. I will now attempt to hook up input 2

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been trying to do my ramp shadow setup.

Wanted to make it so that the blur is dynamic; so I can adjust and animate it.

I cannot constrain a ramp input to an object.

I am having trouble creating my python function as an expression.

I managed to create a cube (named locator) for the blur amount.

and then to create a cube for each input ramp. I then set driven keys for each of these local cubes so that they are driven by the main cube.

these local cubes work quite well for input3 on each inputRamp.

My question now is whats the best way to hook up input 2 (bottom outer)??

input2 should equal 1- input3

if I use connect attr can I slip in some math nodes?

I will try to slip in a reverse math node

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```
cube = mc.polyCube()[0]
ball = mc.polySphere()[0]
mc.xform(ball, translation =[0,4,0] , worldSpace=True)
reverseNode = mc.createNode('reverse')
mc.connectAttr( '{ball}.translateY'.format(ball = ball), '{reverseNode}.inputX'.format(reverseNode = reverseNode))
mc.connectAttr( '{reverseNode}.outputX'.format(reverseNode = reverseNode), '{cube}.translateX'.format(cube = cube))
```

I did this test which sets up a reverse relationship between a cube and a sphere. It works fine will now try it in my ramp shadow script.

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12_04_13

night Tree cont.

Strategy/ intention;

my ramp experiments yesterday didnt quite work as I expected. I am going to give one more go to striated ramp script. Hope to use the striations to do more with the road.

Generally, I feel today that what I am after is a 3D visual language and toolset that focuses on the phenomenology of perception; the way that we can shift our attention/focus from one object to another; the way that we “see through” objects (eg. I am seldom conciously aware of the street lights; I am just vaguely aware that I cant make out the details at the top of the tree where they are “burnt out” by the glare of a light.

2.45pm... got the ramp script working to a degree. need to add a few more controls etc to make it usable.

No I have decided to move onto another scene, one I can get some results quickly...

Processes, tools, and techniques used;

using NURBS curves to draw over trunk and extrude poly face along curve.

thinking where the curve cvs sit in zdepth; had the idea that it could be based on tone in the drawing.

Unusual (less common) processes, tools, and techniques used;

- extruding poly face along curves means that when I go back and change the number of divisions on the first extrusion, the form flips around.

I prefer the form when divisions is set to 30 (rather than 5)



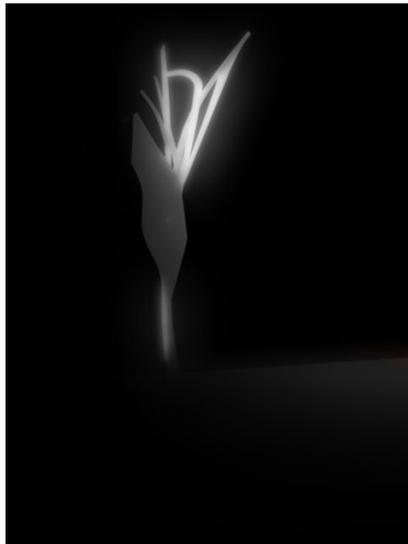
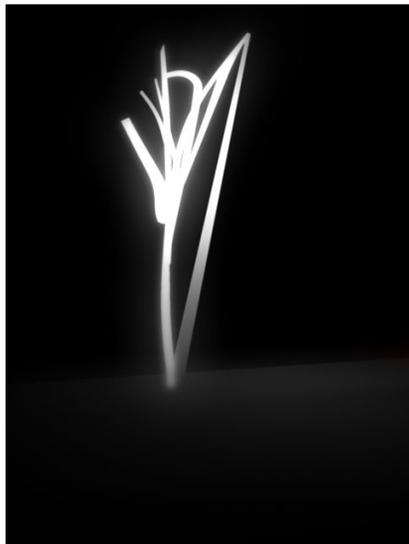
- linked a couple of ramp textures in a LT to create a ball (might be an easier way without the LT?) and moved this ball through scene (reminiscent of a passing car. All geo except planes has the same shader. rendered a few movies...



Questions arising during production;

- could an animation of the tree original mesh divisions produce an effect like blinding light or some other kind of harsh perceptual phenomena?

.....well I had a go and think its somewhat successful. here are some pics; and I also rendered a movie...



Thoughts arising during production;

- DEFORM VIA HISTORY CHANGE; I like the deformation achieved on this tree trunk because it feels like the deformation is not arbitrary as it might be if I added a random element to the position of vertexes for example. In this case (by animating the number of divisions on the base extrusion) it feels like the nature of the deformation is due to the processes, techniques/tools/medium I have used.

- thought it could be cool to make the (concrete) light source first then add models into it

- idea for my antidote to paint fx, strikes me that trees are a good case study for phenomenology over objective reality. My tools for 3D users could be a kind of "spooF".

-idea for a tree building UI; curve facilities = move pivot to position of $cv[0]$; ?maybe randomly rotate

-How and when does the experience change when you do something many times?

what I mean is; while I am working out my code for creating a ramp connection according to the position and number of cvs on a nurbs curve, I start with 4 CVs. Once I get it working I will execute the code with many CVs. I would then like to see the point at which the experience changes, when its not just shades of grey, but becomes a "different animal".

- LIGHTS, I am thinking it may be best to use lights as well as textures and projections.

Tom is using 1,2,3 Catch right now. That makes 3D models and textures them; it ostensibly “bakes in” the lighting.

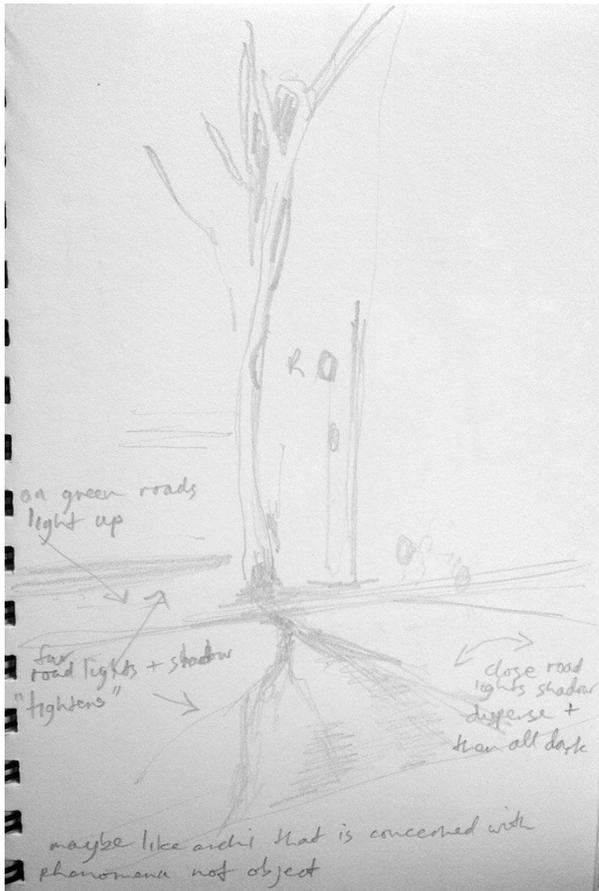
Summary;

Absorbing day. first half coding. second half ‘playing’ in Maya building a scene based on a sketch. I managed not to do too much work on “auto-pilot”; I didnt fall into the trap of “filling in”

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11_04_13

night Tree



Strategy/ intention;

Start with the shadow. Use a ramp and vpos to change fuzziness.

I am deliberately starting with the phenomena(the shadow) instead of the object (the tree).

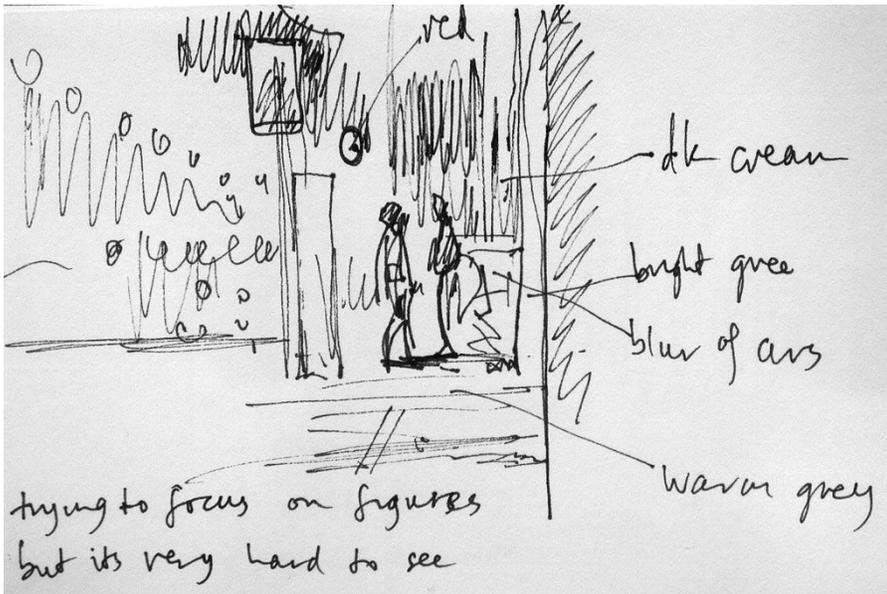
Chris Jones suggested I use lights, but I want to make a texture, something I can link up to recreate the visual phenomena as a texture. Why not use lights, specularity, etc? I am thinking of the shadow as an entity in itself, not a byproduct of lighting conditions (accidental qualities), and this leads me to make the shadow directly; before the tree and independent of the tree. I think the shadow will end up being stylized in a way that emerges through the tools and the processes.

...I'm also wondering if the shading network itself might end up looking like a tree.

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10_04_13

Busy Intersection



Processes, tools, and techniques used;

start with camera BG colour?

set viewport colour to the same (maybe I can link these?) - making a python script to do this....

Summary;

I decided to create a scene from my ride home the night before. I sat down at the computer to start making; I was trying to recall the colours which were largely muted and subtle. Immediately I wanted to "lay down the background colour" as I might when starting a painting.

I didnt actually end up building any objects on this day of work, but I enjoyed the process of writing a couple of scripts to help lay down a background gradient that is easily adjustable (via a ramp texture node) and is linked to the colour of image planes on the renderable cameras.

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09_04_13

Thoughts arising during production;

I feel I need to simplify, look at the painting and simplify in a way that draws out the characteristics of the image. Dont simplify along obvious lines (eg, foreground/background...). From this simplification I can then let the complexity emerge again.

Summary;

Not enough time and not enough surprises today for the process to be engaging.

But it has made me think that I'd like to go back to the source, ie make observational sketches or notes to work from. I'd like to engage with the visual phenomena and take notes with 3D software in mind.



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08_04_13

Processes / Tools/ Techniques used;

working from the 2D reference, but I am adjusting the form of the car to make it look “right” from all angles. Do I have to work like this? To what degree should I make it look good in all viewports, and to what degree can I leave it imperfect, or even not making sense?

Less common (or unusual), techniques /ways of working;

modelling and texturing at the same time, thinking of the 3D form as a canvas for colours. Avoiding the idea that the form has to be correct or precise before textures/ colours are applied. NB of course it is not entirely uncommon practice to change the model after applying textures, but usually this isnt scene as ideal (you have to reorganise UVs etc).

Questions arising during production;

What happens when the form doesnt correspond to the colour/light? when the form depicted is largely achieved via shading/colour; or when the form depicted (represented) is at odds with the virtual 3D form...

Technical -- **shape node / attribute editor > Smooth Mesh > Extra Controls > Boundary Rules = “Legacy”...do this to change so that the edges of a mesh are smoothed.**

Thoughts arising during production;

RULES

do I need to make working rules for myself in order to avoid habitual working methods?

eg, can only spend 15 mins on a model before applying colour?

FILLING IN

I am reminded of warnings from my art school teachers about “filling in”. I guess this warning is against slipping into habitual ways of working. continuing to approach the work afresh (what do I mean by this?) can be a way of not filling in. I’m building the car now, and I’m filling in (it feels like, i.e. its boring and I want to get it done so that I can do the next bit). perhaps if I look at the reference again and start with the bits I find interesting...maybe the uninteresting parts of the image/the model/ the process, will take care of themselves.

SWAPPING MODELS

The car is now blocked in, should I keep a copy of the LR model (lots of iterations perhaps) for possible use in an animation? or is it the same to use the “reduce” tool (my hunch is its not the same).

NAMING THINGS

part of using 3D software is naming things. The user can name objects or “nodes” as they are created, or the software will create automatic names. I usually use a combination (name objects myself, and leave other objects with default name).

The software needs things to have unique names (it uses namespaces to do this I think).

As naming is already part of the process, I’m thinking of scripting opportunities that may arise from this;

- How could a script **use default names**? eg. utilising the time it takes to model or the sequence in which things are made; if I create a series of objects which each starts from a polycube and then apply a script to the series “pCube1”, pCube2” etc, I could use the sequential numbers to drive something (eg, the deformation of the model or the colour of the model). Of course this would only take into account the sequence, not the time taken. Maya does have an internal clock so maybe I could also harness the time taken.

- Could I **develop a naming strategy** (convention) to use as I work so that I name things according to how I want my scripts to effect them?

Summary



End of day image - I now need to focus on achieving the sense of light. Perhaps even before blocking in the background.

Thoughts for tomorrow;

don't be afraid to digress from the reference pic

maybe keeping it simple is the answer

think about process (tools/ techniques) and movement / animation

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06_04_13

I want to move away from 3D as simulation. I’m using a starting (reference) image (one or more) to make this work but the reference is just a guide; a starting point. The idea is that the production process itself will have an impact on the final image. So in this case of the Petrol Station, the reproduction of one of my old paintings is a starting point. I will not be trying to replicate the painting as a whole (eg the texture of the canvas and the daubs of paint), rather I will be aiming to re-present certain qualities of the image (eg. the colours; the “atmosphere”, or the quality of the light). So that the final work is not a mere copy of lesser worth than the original painting, my hunch is that I need to follow up unforeseen opportunities that arise through the 3D software production processes.

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05_04_13

Starting a scene based on an old oil painting of a petrol station at night. will leave the figure out for now.

I will begin by using processes/tools/techniques that I have used in production (Denso, Honda). But this time I am open to unforeseen opportunities. By being open to unforeseen opportunities that arise via the production process

(using UVs, ramps, shaders, polygon models, stylus input) can I make something that is as interesting, or more interesting than the original painting? or interesting but different/ interesting in a different way?

Will the process be more engaging if I am open to surprise opportunities? Will I achieve more periods of flow state?

I tried using "crater" texture but it doesn't look any good. I think it's kind of the wrong metaphor (it's trying to be organic; trying to replicate the canvas texture. I think I need to be more willing to translate into this new medium; let the old look (of the painting) go if and where and when it doesn't feel right.

Reference Pic



Pic from end of day 1 working in Maya



Processes / Tools/ Techniques used;

Much of this process fits with the "normal" (common) 3D workflow;

Start with models as close as possible to the centre of the world.

duplicating objects

starting with grey models

using quads where it's easy / possible

naming objects (transform nodes)

creating surface shaders, assign ramps as colour inputs.

use the colour picker to pick colours from the reference image

Projecting textures / using UVs

Grouping Objects

Use display layers to change the display of objects on a regular basis (so that I can see the image behind the objects for example, I have a display layer set to no texturing).

considering objects in turn (focusing on UVs and texture/colour for one object, one part of an object). However I am not considering lots of different attributes of an object such as “specularity”, “reflection” etc. It is all colour to me.

Others are **less common (or unusual) ways of working**;

I am resisting the urge to look up reference for various objects (eg. what does a bowser pump look like?). I guess I am working from memory (my memory and intuitive knowledge of what a bowser pump must be shaped like).

Questions arising during production;

what would be the benefit of using one swatch (ramp) per colour? so that ramps feed into ramps?

How to work with the software? what does it do/ what's its logic when it lays out the UVs “automatically”?

As colours are ostensibly assigned to faces, can I change lighting by altering the model/geometry?

what happens visually when colours don't align with the geometry? ie when the “baked in lighting” doesn't quite make sense with the geometry?

What is gained by making it “3 dimensional” (ie by having the computer (the drawing tool) store the graphical information in 3 dimensions? eg. you can move the camera, turn objects and change thereby potentially changing their colour and profile shape.

How much should I “fill in the gaps”; what is “actually” going on? what is the true form of that object that I can't see?

Maybe it's good to roughly map out objects first; rough out many before refining?

Thoughts arising during production;

ramps can be sharp, or blurry. This reminds me of my artschool training where we were encouraged to focus on “edge quality”.

could use naming of geo to dictate how a script processes it; assign colour/ shader, layout UVs.

Maybe I should keep the camera still and use other aspects of the virtual 3D data.

- RAMPS - colours as numbers - threshold - if the numbers are above or below a certain level, do “this”

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04_04_13

I could dive in and use the techniques I have used before; I have an idea in mind of what I want to make and the processes (tools and techniques) I want to use.

I could start with an image such as a past painting and recreate that using these techniques I have in mind.

But I also want to do my programming homework.

As I play around with code I am getting ideas for future projects, things I want to make;

eg. the randomized transform allocation makes me think of swapping models as a way of animating. The “swap” could be random or it could have logic to it; it could be linked to another attribute (proximity of camera, sound, or colour). The randomize colour function I wrote makes me think about colour in a different way (hueMin and hueMax when close together produce grey, numbers for R G and B dictate how warm or cool). these functionalities remind me of using ultramarine blue and burnt sienna to make grey and then thinking in terms of adding warmth and “coolth” to that base grey, to “push” and “pull” the canvas.

It feels important to me to be discovering. I'm not excited by the idea of illustrating a design that I have already made or already decided upon.

.....

```
import maya.cmds as mc
import random
```

```
def assignRandomColour (minHue = 0, maxHue = 1, channels = [0, 0, 1]):
```

'''

assign a surface shader of random colour to each mesh
you can specify how much of each colour by entering a value from 0-1 in the corresponding channel
-how to make it update as you move a locator or change value in the viewport?
-I could use a math function (eg "cieling" to clam tween 0 and 1)

'''

```
# Make sure that channels is a list  
if not isinstance(channels, list):  
channels = [channels]
```

```
# Get selected meshes  
selectedMeshes = mc.ls(selection = True, dag = True, type = 'mesh', long = True)  
# if no meshes selected use all meshes in the scene  
if not selectedMeshes:  
selectedMeshes = mc.ls(geometry = True, dag = True, long = True)
```

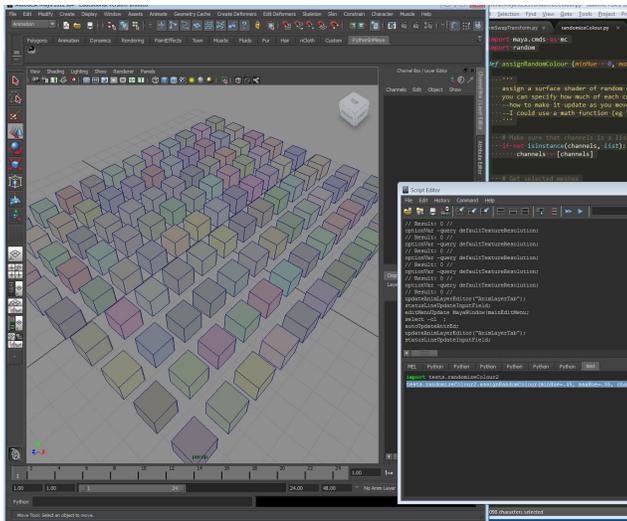
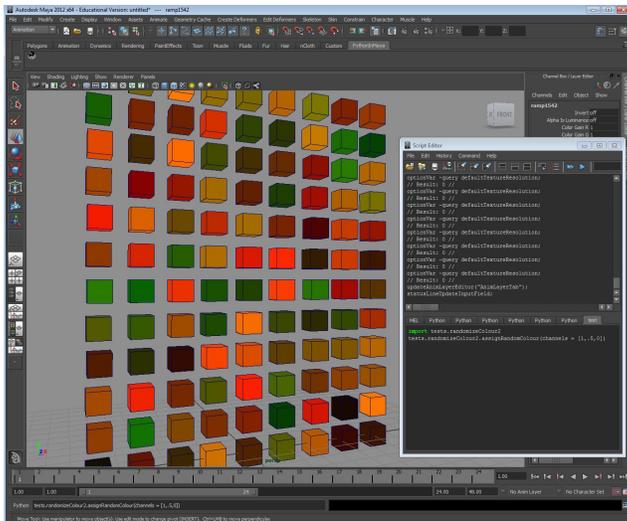
```
# Error if no mesh selected  
if not selectedMeshes:  
raise RuntimeError, 'You must have geometry in the scene to use this function'  
#  
for mesh in selectedMeshes:  
# generate a random number (one per mesh)
```

```
# create a surface shader  
shader = mc.shadingNode('surfaceShader', asShader=True )  
# create a ramp  
ramp = mc.shadingNode("ramp",asTexture=True)  
# a shading group  
shadingGroup = mc.sets(renderable=True,noSurfaceShader=True,empty=True)  
#connect shader to sg surface shader  
mc.connectAttr('{shader}.outColor'.format(shader = shader) ,'{shadingGroup}.surfaceShader'.format(shadingGroup = shadingGroup))  
#connect ramp texture node to shader's color  
mc.connectAttr('{ramp}.outColor'.format(ramp=ramp), '{shader}.outColor'.format(shader=shader))  
# assign mesh to SG  
mc.sets(mesh, forceElement = shadingGroup)
```

```
colourR = channels[0] * (random.uniform(minHue,maxHue))  
colourG = channels[1] * (random.uniform(minHue,maxHue))  
colourB = channels[2] * (random.uniform(minHue,maxHue))
```

```
# set ramp colour  
mc.setAttr('{ramp}.colorEntryList[0].color'.format(ramp=ramp), colourR,colourG,colourB)
```

#assignRandomColour()



User specifies min and max hue (if these numbers are close together then colours tend toward grey), and a number between 0 and 1 for each colour channel (so the hues can lean toward red, green or blue depending on this input)..