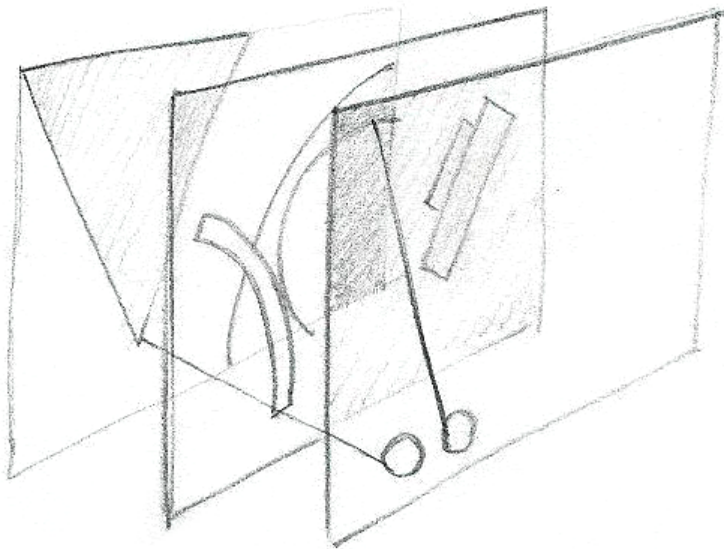


Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Visually Representative Web History Browser

Workbook

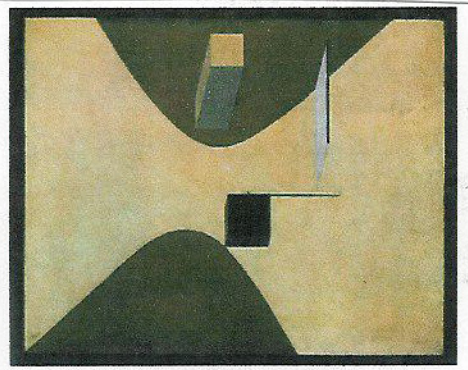


by Gray Hodgkinson

<http://www.designspace.co.nz/mdes.html>

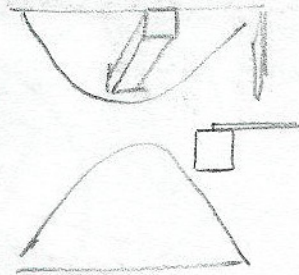
Part of a thesis submitted to the College of Creative Arts, Massey University, New Zealand, as fulfilment for the degree Master of Design.

© Gray Hodgkinson and Massey University 2007



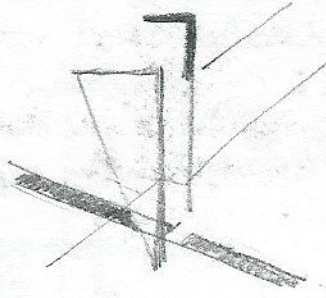
Proun23_no6_1919_800px.tif

2D shapes/curves + 3D blocks

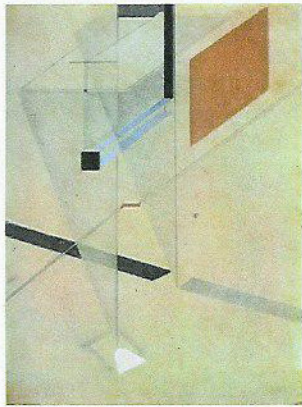


Plane
Curves

Planes, Triangles, paths & wires

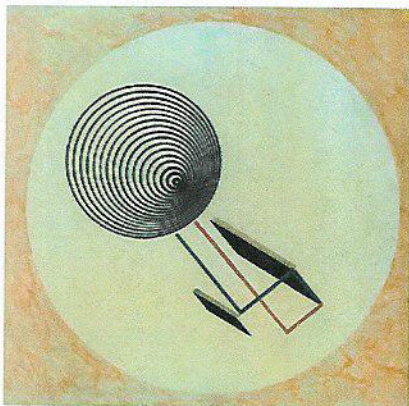


3 way directions
with strong vertical
Transparency



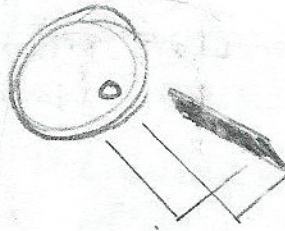
Proun31 Forms before #8E4FF.tif

Circular (cones?) + wires & cube spots

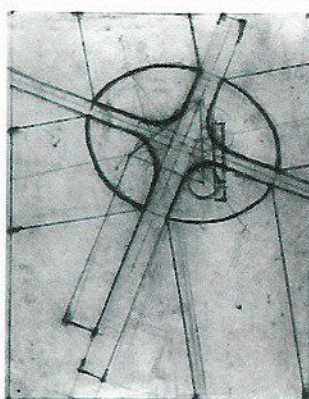


Proun93_Free floating#8E4FD.tif

Planar (circle) background

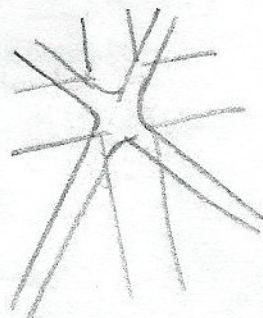


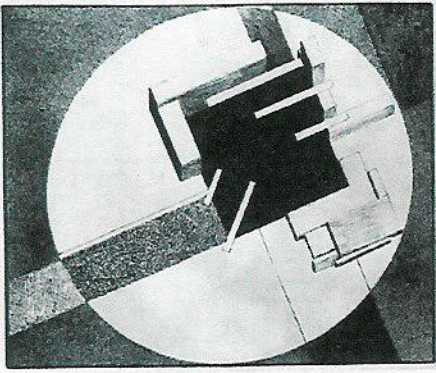
Planar backgrounds
act as "grounding" planes.
Textures provide scale,
deliberate or accidentally.



Proun Study for G7_800px.tif

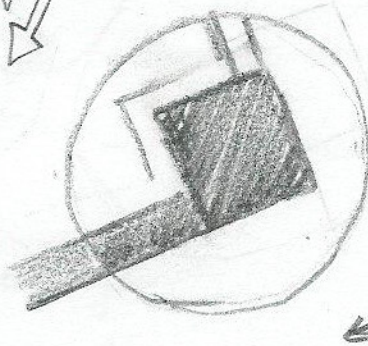
Plan (not planar)
Blueprint / Diagrammatic / 2D
Intersecting 2-way axes





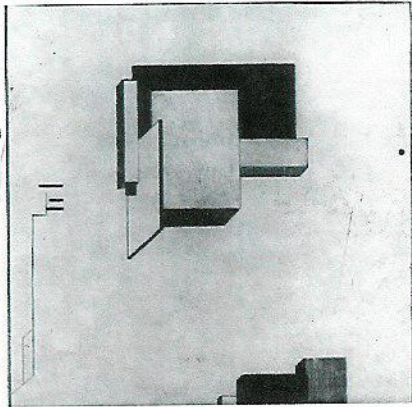
Proun1E The Town 1921_800px.tif

Both "Constructions"



Right angle

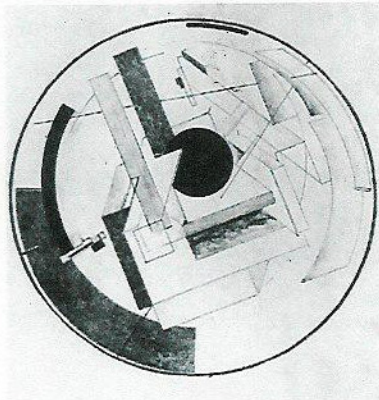
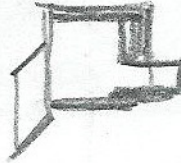
2x Directional, angled circle



Proun1C_1921_800px.tif

3D construction "floating"

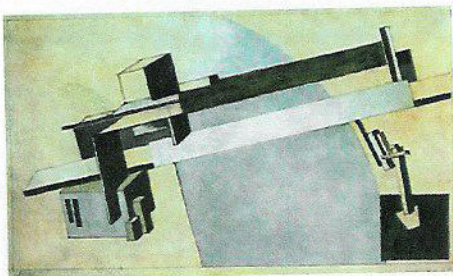
Predominantly square



Proun6B_1921_800px.tif

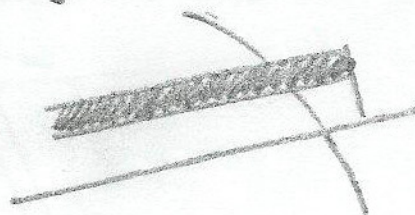
Circular "prism?"
Globular? why?

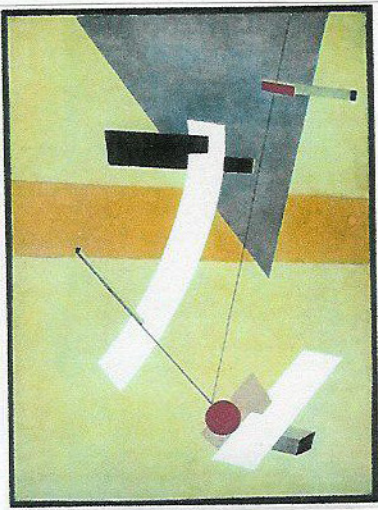
AREA
DIRECTION
POINTS
CONNECTIONS



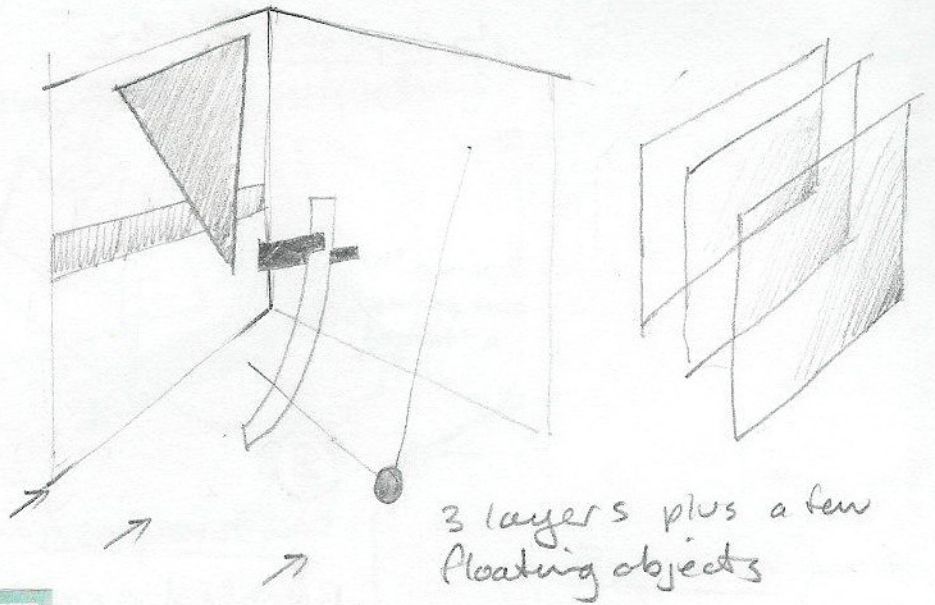
Proun1A_Bridge_1_1919_800px.tif

Another construction
- with mixed perspectives
- note arc
- strong line at 30°

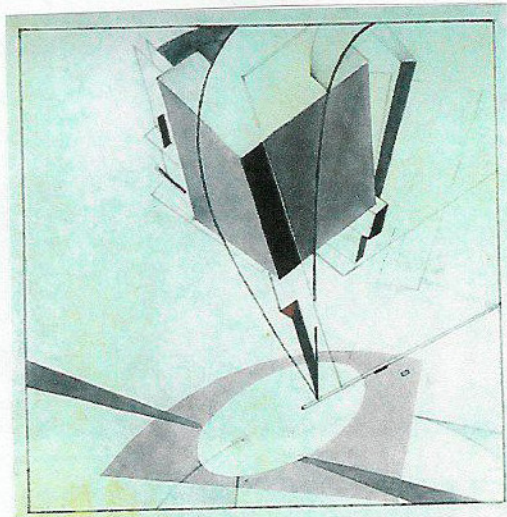




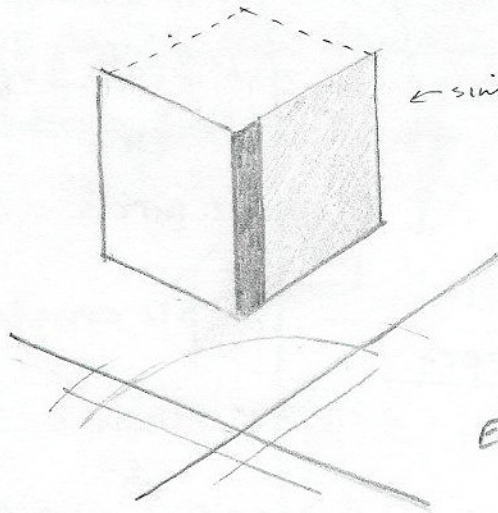
Proun12E_c_1920_800px.tif



3 layers plus a few floating objects



Proun5A_1919_800px.tif



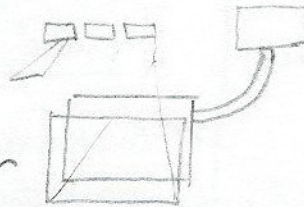
← simplified to a true cube. Many of Lissitzky's shapes are not parallelogramic.

Essentially....

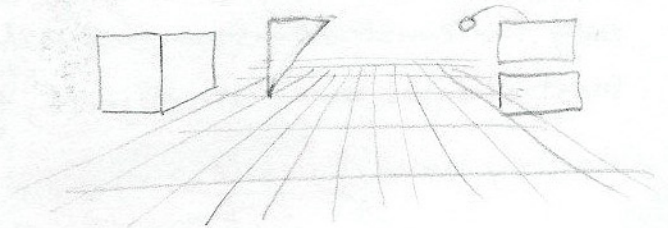
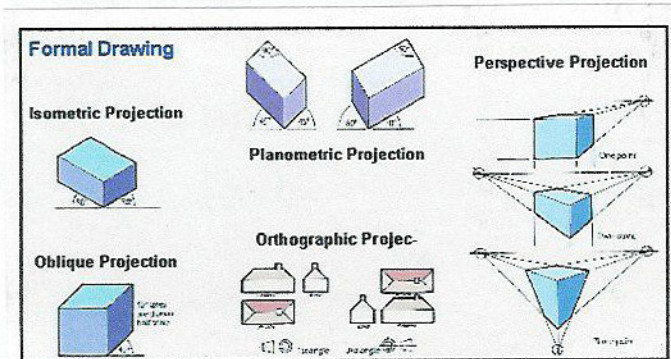
Ground plane with a 3D floating construction

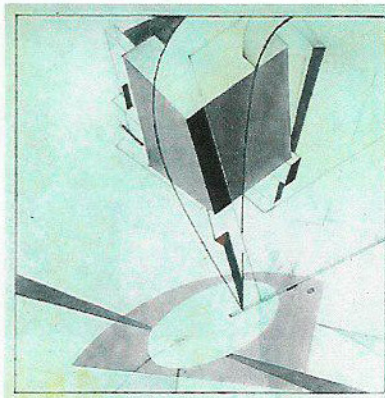
(with other vanishing points added for extra shapes)

multi layered on XY using 2 depth. Essentially 2D on a Z depth. Not very "virtual" - more like 2 1/2 D. But, other shapes can be included to add to 2 1/2 D, to provide recallable navigation



OR base on a ground plane - may provide a stronger grounding, a la "Grid."



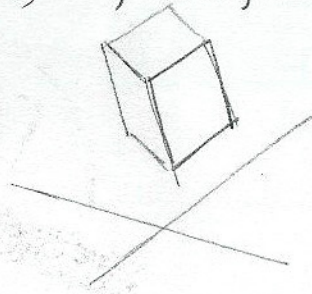


Proun5A_1919_800px.tif

← Sophisticated Mix

Multi-angle, arcs, cubes, with wires & spots.




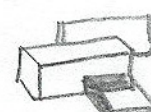

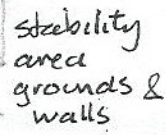
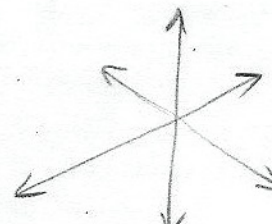
plus a "hole",
or perhaps
a "target".



• mixed axes

⑧

Key shapes/components

- 1° Angled axes 
- 2° Spots & wires & points 
- 3° arcs 
- 4° 3D constructions 
- 5° Planes & 
- 6° Triangles & paths 
- 7° Limited number of axis, 2 or 3 (x, y, z) 
- 3/4 view of "cubic" shapes?
- 8° Backgrounds - painterly/textured, provide scale.

Provide main directions, routes

Places in space

connections, tension, dynamic.

"slow" scale with movement

resting places for the eye. symbolic "houses"

stability area grounds & walls

Not 3D - depth through texture, not perspective.

strong movement flow.

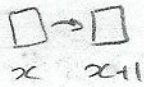


Functions of shapes

- To define area
 - planes
 - tri's
- To define direction
 - axes, paths
 - wires
- To define points in space
 - spots,
 - points
 - constructions
- To connect points in space
 - wires
 - paths

- Most shapes are either 2D, or 1D (wires) only the constructions are actually 3D.
- Most shapes are 2D objects, tilted into 3D space.
- Do they have thickness?

Toggle



$x = \text{custom param}$
 $x+1 = \text{custom param}$

Laslar Lissitzky

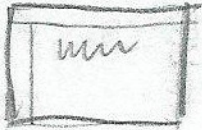
How design first design? - choose style - planar, construction, etc

- choose function - landscape

- 2 1/2 D

- icons / storage

- Thumbnails

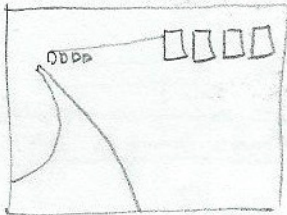


Hierarchy storage

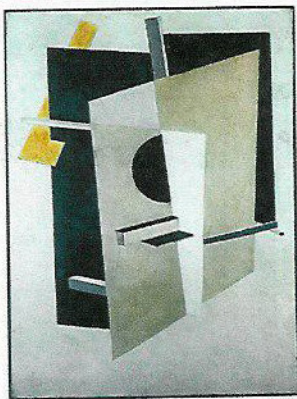
[Intercept browser history?]

[OR Add a "Keep" button]!

[USE Random for BG's, ala Mondrian makes]?

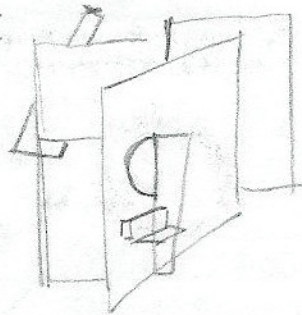


2 1/2 D overlay 3D?



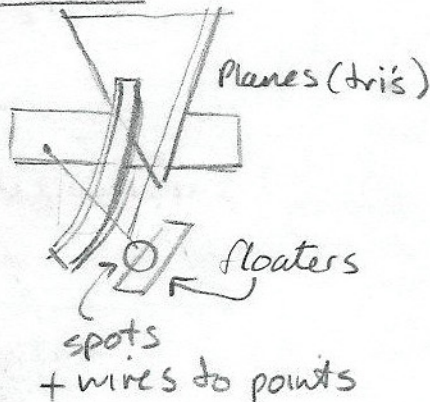
Proun Interpenetratin#8E500.tif

Planar



Proun12E_c_1920_800px.tif

Planar + arcs



Typical paths → back butts → thumbs - 3D - spatial - 3D Mountain

3D vis → Lissitzky

Affective
Methods

} Jordan, Norman

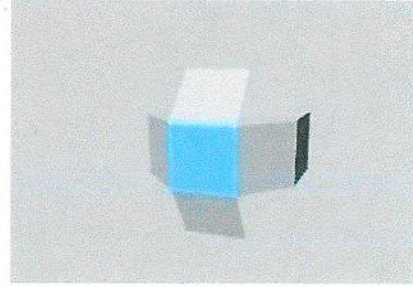
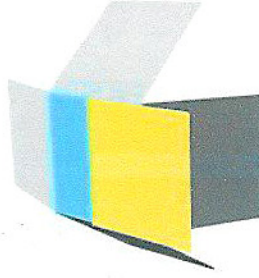
AFFECTIVE CP

Intro

Norman - response → cognition

- Jordan - characteristics
- pleasures
 - 10 design principles
 - Formal / Experiential
 - Engagement
 - Direct Manipulation

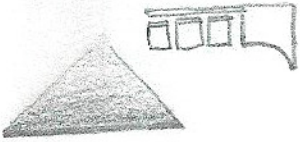
Early Axel test using hinges



Thurs June 3 '04

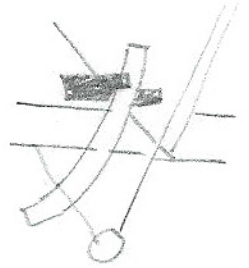
• Group & store web page thumbnails

Distance = time?



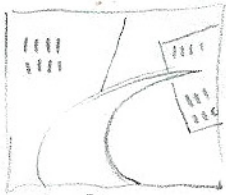
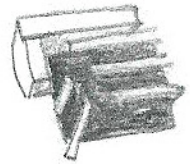
Lissitzky - Objects in space
eg Procm IZE

- Construction's
Procm IE Town



DOES USER
CONTROL THE
STARTING
LOCATION?
HOW?

vision of
whole space?



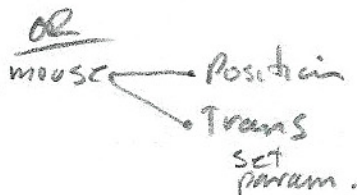
Paths?

Distance = transparency?

Axel

mouse → Position

Position → transparency
set param



Relate Custom - Axel

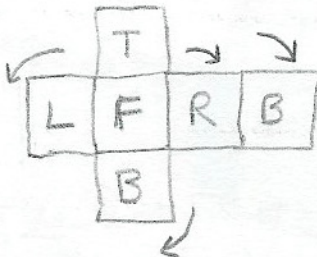
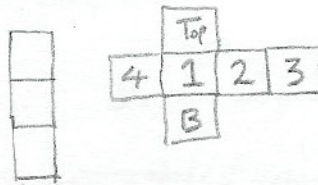


- Select target:
 spheres position
- Go to Relate, Custom
- Operator [, ,]

[sphere1.position.x, sphere1.position.y,
cube1.position.x]

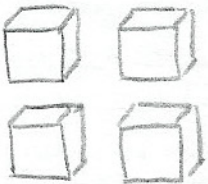
↗ means, cube's Z controls
sphere's Z

- Axel
- S select
 - E scale
 - R rotate
 - T translate
 - Z zoom
 - X pan
 - C orbit
 - ↑C orbit free
 - click, opt click = move group
 - h snap grid
 - B preview
 - ⌘ keep offset (while setting constrain)

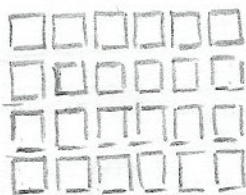


unfolds origami style

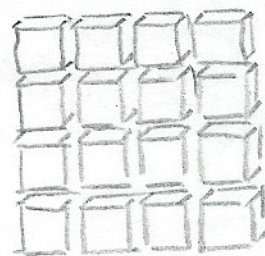
• 3D as a means to hold, or stack data.



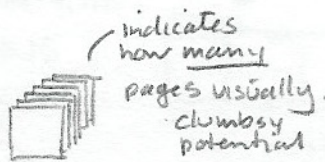
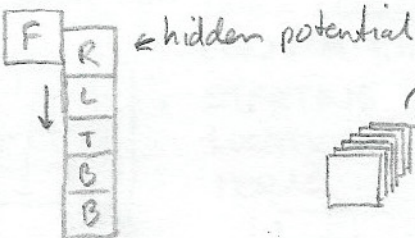
24 sides
12 visible
12 hidden



24 sides
ALL visible



16
 $\times 6$
213 sides!
16 visible
32 partially visible



Each block represents a site. Cubeness is built by multiple pages of any site

3D storage
2D display & access



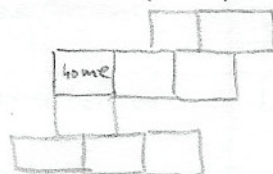
colour? or letter

- colour faster - "Kaasten" - Thumbnails strength:
- colour
- layout
- dominant text

perhaps not cubes why cubes?



could construction reflect nature of site? Yes but very complex.



Temporal or site structure.

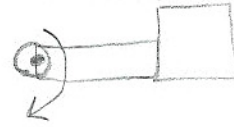
↓
sort out in step 5.

Folding out back plane

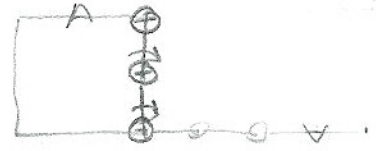
Pose constrain holds pose with object.



Two pivots



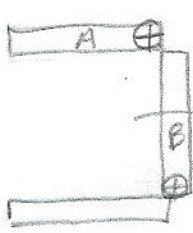
objects cannot have two pivots



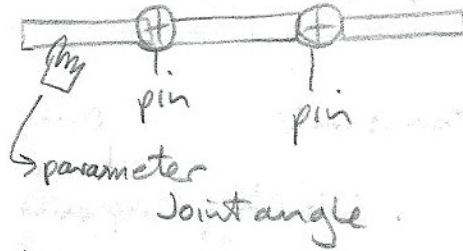
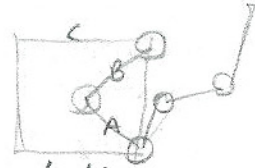
constrain - orient constrain

- direction - xy z movement.

Centre point



constrain pose to lock to B - No orientation
- orient parameter to rotate.



Joint angle

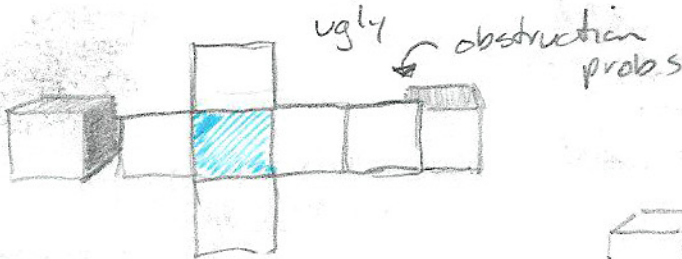


Axel - cannot Duplicate Interactions.



3D Box unfolding not so 'revealing' many huge variable less repeatable code.

not as 'cool' as expected - no a strong interface feel - perhaps not suited?



Try FLASH

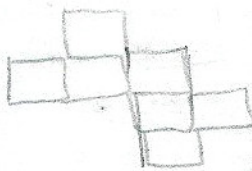
- more modular, faster, easier to control aesthetic.

orthographic? Try in Axel.



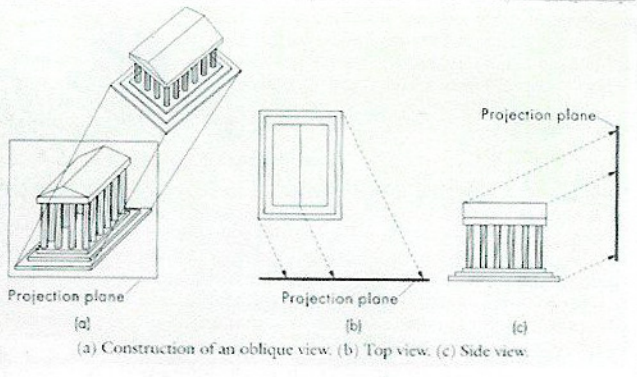
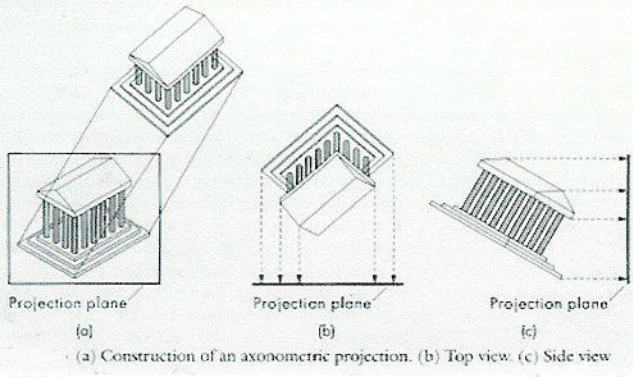
Items appear by alpha fade-up

Remember - Buttons cannot receive actionscript code!
Use movie clips.



Perhaps use some sort of random assembly?

↳ But where's the 3D?



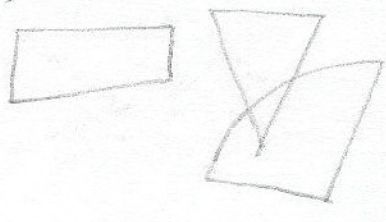
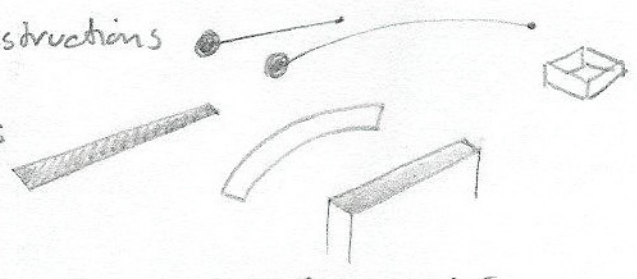
[AT SOME STAGE, WILL NEED TO: = how integrate (or not) with Browser]
 = consider page/history hierarchy.]

{ use Random to generate objects? }

FG objects - spots, wires & constructions

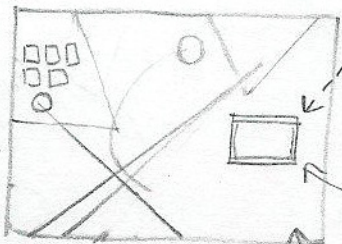
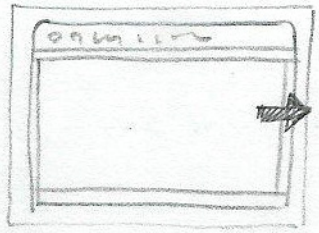
MG objects - planes, paths, arcs

BG objects - planes, tris, arcs



Axonometric

- view plane not parallel to object
- Projections generally orthographic
- 1. Isometric - equal angles 3 equal
- 2. Dimetric - equal angles 2 equal
- 3. Trimetric - unequal angles

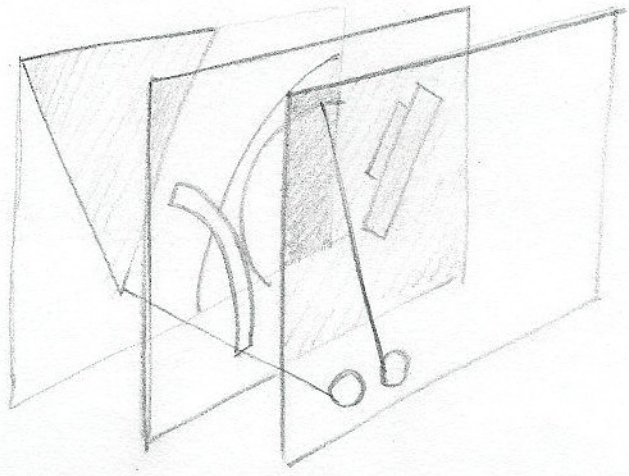
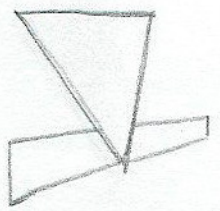


Page shrinks to thumbnail

} Ideal scenario
 - OK for prototype
 - Difficult to implement

3D Background is revealed.

Need a system that "constructs" the Lissitzky type space.



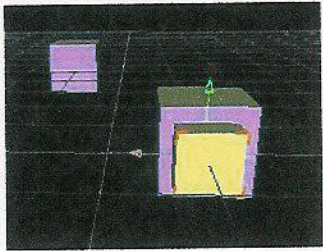
[3 layers or ?
 "Room Corner"]

Begin with layers
 - BG - can become room-like later if deemed necessary.

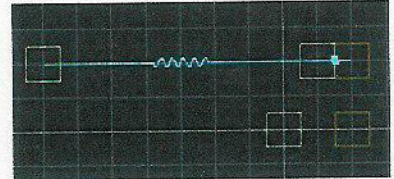
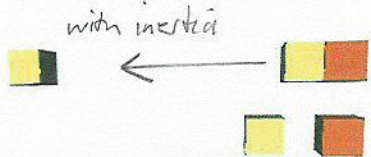
layers will provide simple model to initially explore with and establish visual language.

Axel Edge Screen Grabs

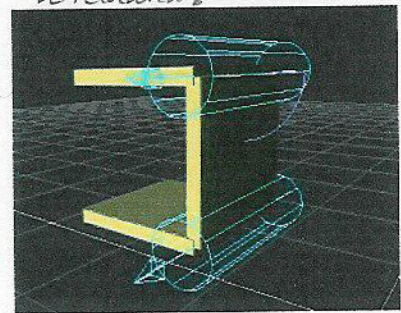
Controlling the various scripting functions



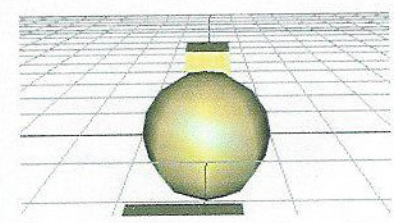
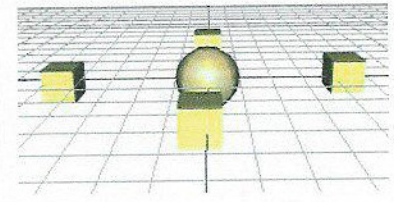
Button change out cheat



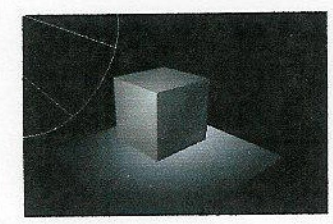
Spring constraints used for inertia
- Permanent link - though spring can be relocated



Pin rotation - opening containers.
Hidden faces that reveal contents.
- Rather fussy to set up.

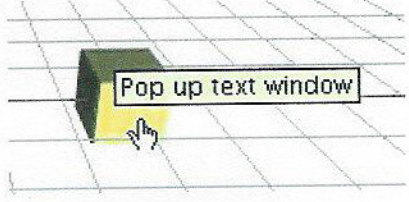


Camera zoom on click (easy)



Lights - link to depth, visual depth and illusion?

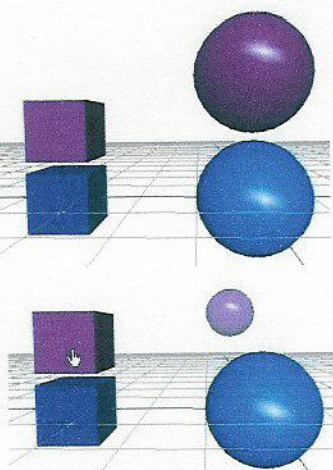
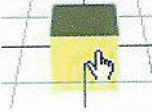
Pop up



<http://www.designspace.co.nz>

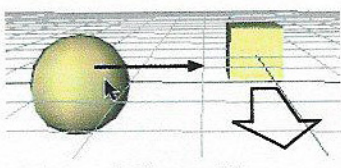
Link on object

Replace or New Window. No obvious way to open within Axel.

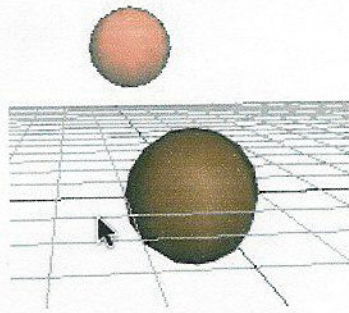


Fade with distance - standard position translate, also transparent translate. One way trip - how to bring back?

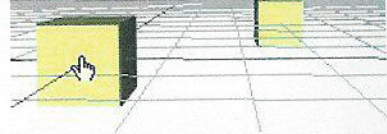
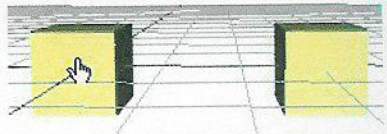
Too basic - need scripting



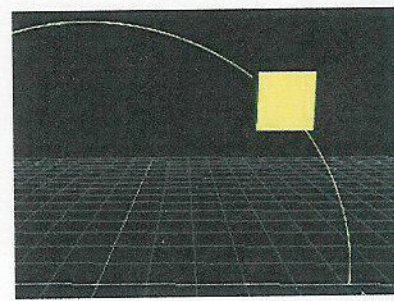
Position relation script. Easy.



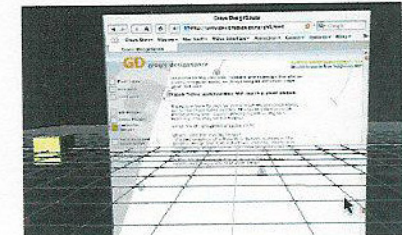
Ball1: transparency linked to zdepth, Ball2: colour linked to Ball1. Tricky.



Double function button: uses micro change in butt 1 + position sensor.

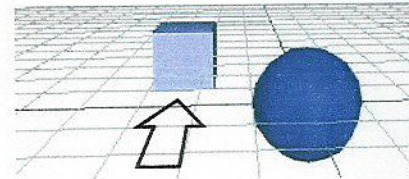
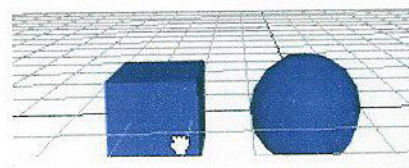
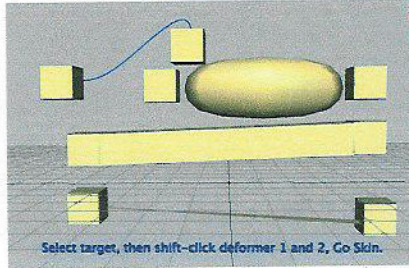


Constrain to path. Creates an animation timeline. If mixed with function, becomes unpredictable - perhaps have multiple timelines?
Nice visually - "Curvey"



Imported tif image of website as texture - promising.

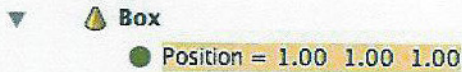
Using Skin to create visible connections - very clever. Select target, shift click controllers, go Model, Apply Skin.



Colour linked - as objects depart, colours separate. Uses distance function linked to rgb or in script

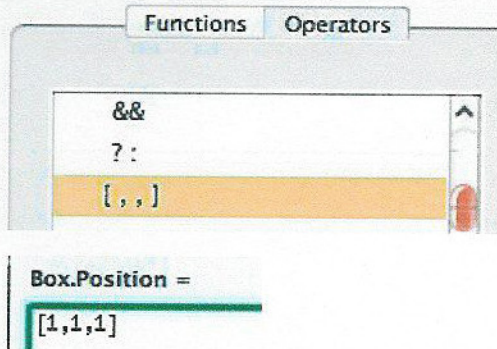
Axel Edge Custom Relations

Select the **parameter** to be affected.



Go to **Relate, Add Custom Relation.**

Type in the function, or d/click from the lists:



Add values. In this case, [1,1,1] = places the object in xyz space.

Box.Position = [1,1,1] ← This top line defines the role of the follow values, so [1,1,1] = xyz.

To alter only ONE value of xyz:

Set the non-changing values to themselves. Eg:

Box.Position = [1, Box.Position.y, Box.Position.z]

Drive ONE value by another object

Set the non-changing values to themselves

Set the changing value to **another object**. Eg:

Box.Position = [Box.Position.x, Box.Position.y, **Ball.Position.x**]

So Box's Z position is controlled by **Ball's X** position.

Distance between object controls transparency

Material7.Transparency = distance (Cube4.Position.x*10, Cube3.Position.x*10)

This means that the distance from Cube3 to Cube4 controls transparency. *10 is simply used increase the ratio.

Zdepth controls transparency.

Use "distance" to measure the distance from X to Z:

Ball1Shader.Transparency = distance (Ball1.Position.x*10, Ball1.Position.z*10)

Object receives colour from another

Ball2Shader.Color = [Ball1Shader.Color.r*2, Ball1Shader.Color.g, Ball1Shader.Color.b*.5]

Object receives colour from another as it approaches, (the back, from -Z)

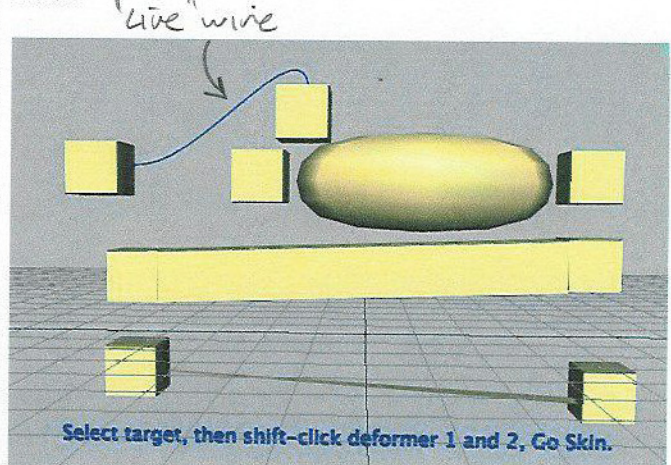
Box12Shader.Color = [Ball1Shader.Color.r + (distance (Box1.Position.z, Ball1.Position.x)*.1),

Ball1Shader.Color.g + (distance (Box1.Position.z, Ball1.Position.x)*.1),


Ball1Shader.Color.b + (distance (Box1.Position.z, Ball1.Position.x)*.1)]

Using Skin to create visible connections

Select target, shift click controllers, go **Model, Apply Skin.**



How to

Attach 

Drag 

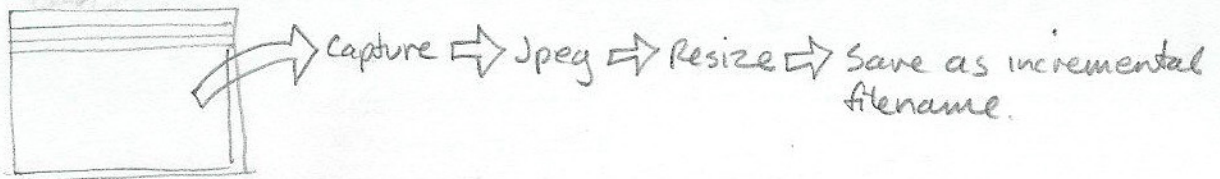
Detach 

1 use script to have top bar drive xyz of bottom

2 This script can be toggled.

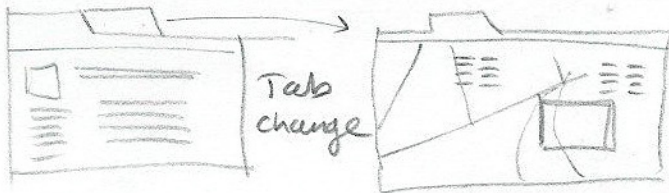
Grouping - watch out, objects behave differently - more wrong etc

Browser window capturing & recall



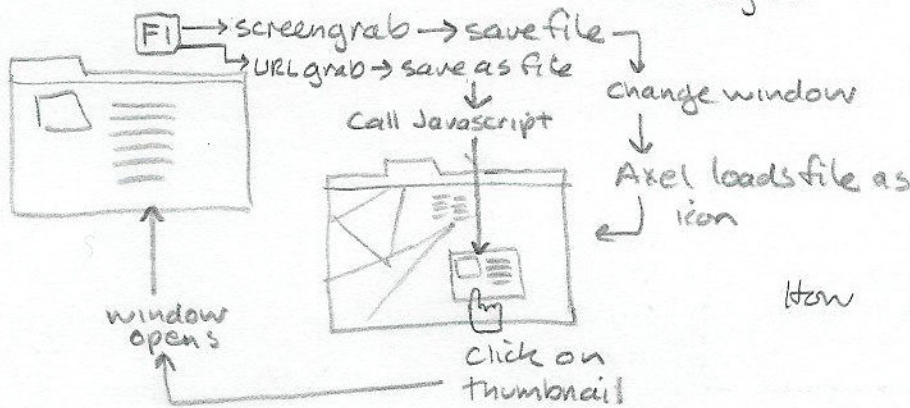
Axel can load images as textures

How does a new page load into Axel?



IF screen changeout is acceptable - browser & Axel could be in different tabs!

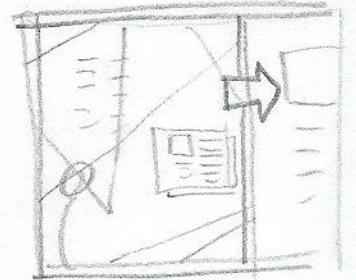
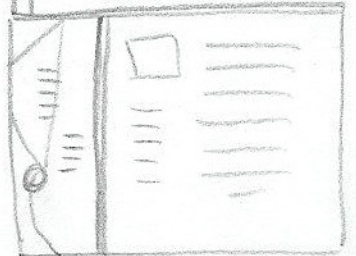
Quickkey could move between.
Eg F1



OR
Work in a Frame window!
too small?
Use Javascript to adjust size?

* Axel can call Javascript - Interact, Reaction...
NEED TO TEST Potential of Javascript.

stay with prototype concept first,
can investigate browser integration in
later stages.



* ScreenGrabs windows under cursor.
⌘-shift-4, space, click.
This could be scripted.



fade to white

Depth

Illustration of depth by "Haze".
Often less than realism.
Why? - to enhance FX
- to aid rendering

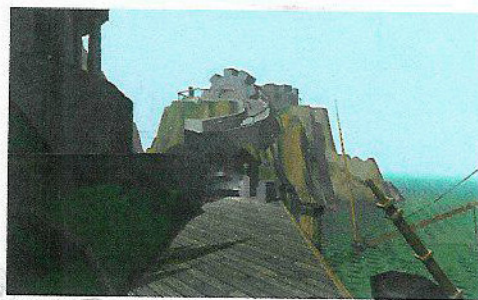
There's one more intangible factor that deserves consideration: the pleasure/coolness factor. It's one thing for an operating system to allow you to be productive and get your job done. However, if that same OS can be as productive, and be cool at the same time, it can draw you in and make you enjoy doing what you set out to do. The more you enjoy using your computer, the longer you will be willing to sit in front of it and get your work done. If your computer is simply functional, you'll get your work done, but you'll burn out more quickly. And OS X surely gets my vote for the coolest OS.

An Appeal to the Soul:

A recent "It's just an OS" remark by a co-worker got me thinking. I spend more hours a day looking at and interacting with my OS than I do with my wife, more time looking at it than looking at trees, clouds, the ocean, or anything beautiful-combined! Millions of people log billions of hours in front of their OSES. For the sake of the soul, OSES at least need to be less aggravating, and at best to be things that are a pleasure to the eye and to the soul. I won't make any claims as to which OS I think does this better, but consider this next time you're pulling an all nighter in front of your computer.

Common in games since Myst 1
- use of atmospheric haze to show depth - also serves to limit depth to limit refresh detail on screen.
Possibility to use to reduce "infinity clutter".

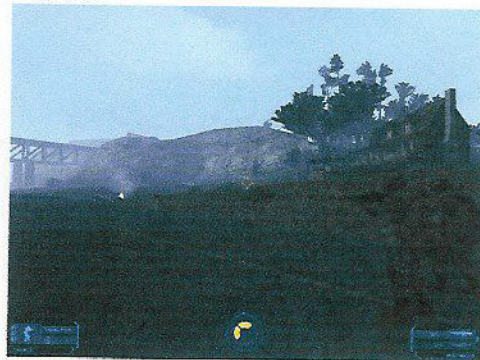
* Does Axel have issues with high number of polys?
Does fog help?



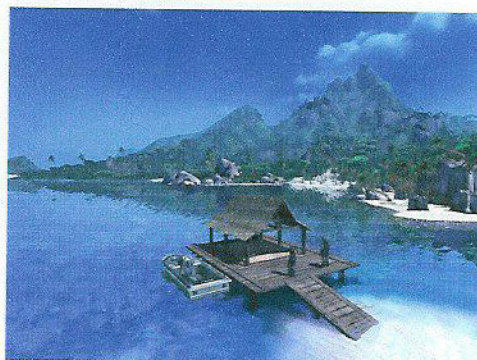
MYST



MYST



GHOST RECON



FAR CRY



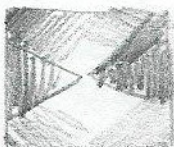
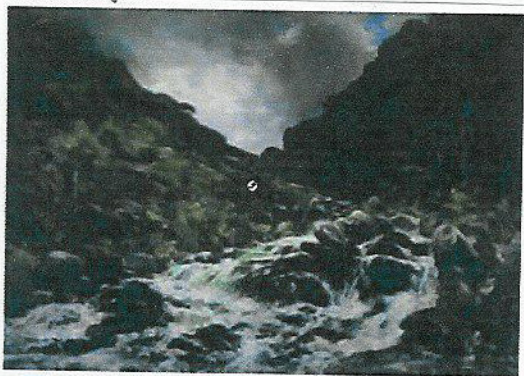
Haze - white (fog)
- black (night)
- coloured

Also consider changes in Hue & Saturation

TEST!
↙

D Pouliot. OS Shootout
www.xv5xp.com

John George

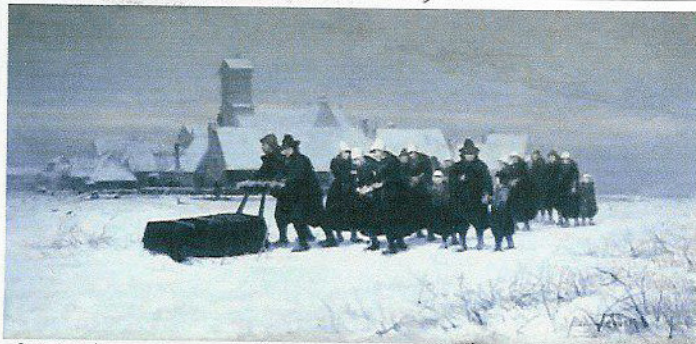


Focused tonal range

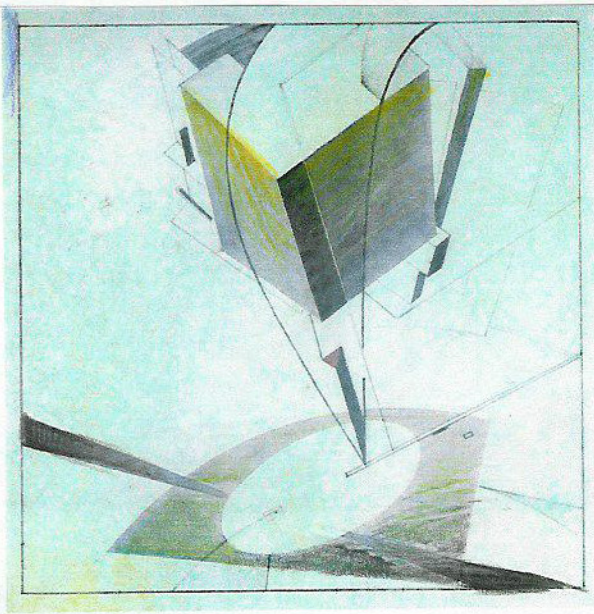
Blue haze. Blur of detail

Petrus Van der Velde
"Romantic landscape" late 1890s

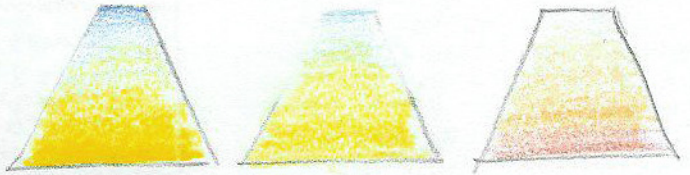
Distant haze = depth - greys



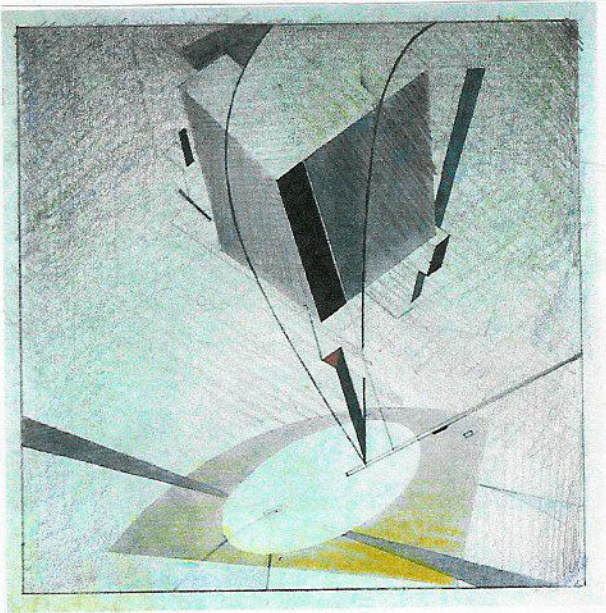
Funeral



Haze / white fog
 Also - basic colour theory,
 Warm colours advance
 Cool colours recede

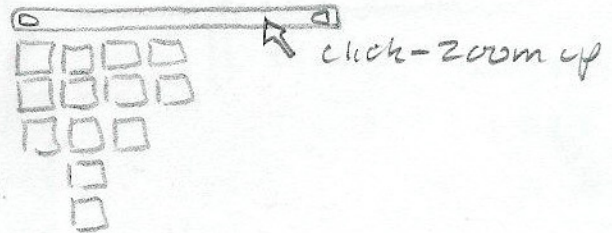


fade to white
 whereas
 PRO, is
 fade to
 dark



How to: position wires - start, stop
 : store icons

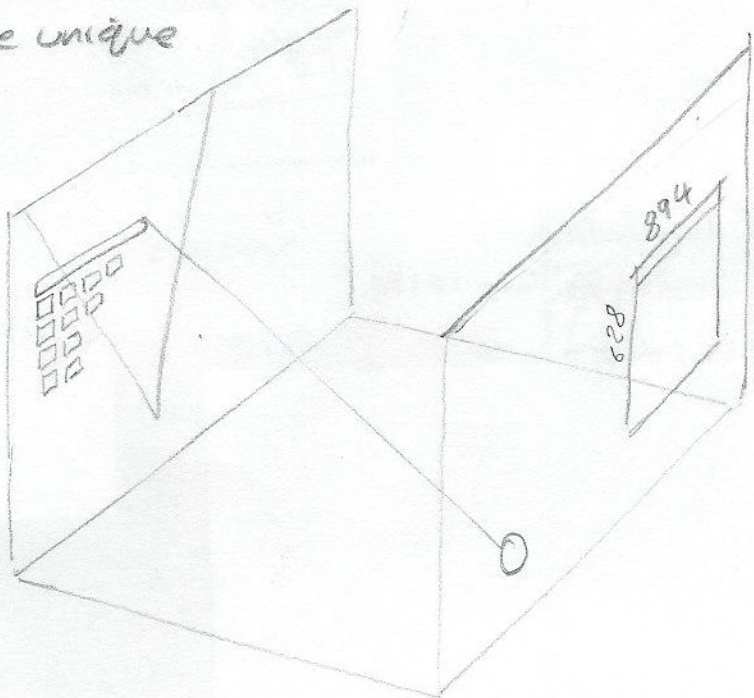
Need a visual storage mechanism
 Continue the "hang" metaphor?

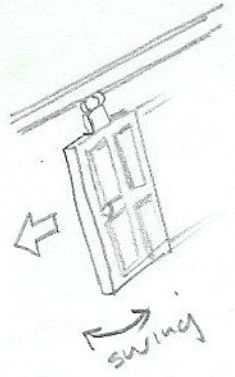
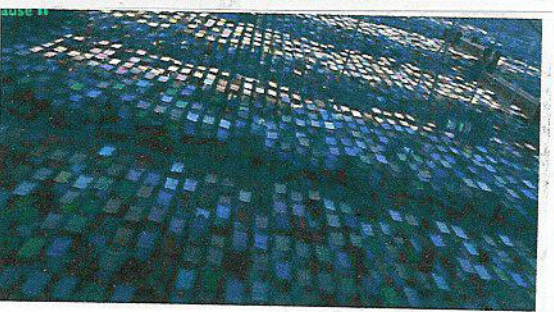
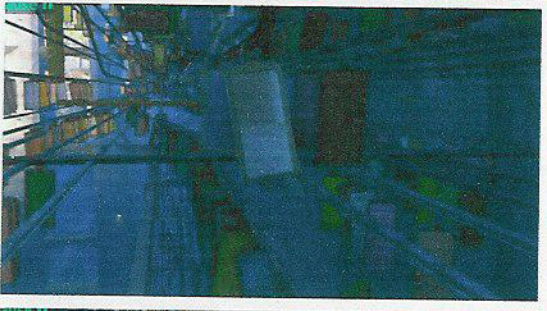
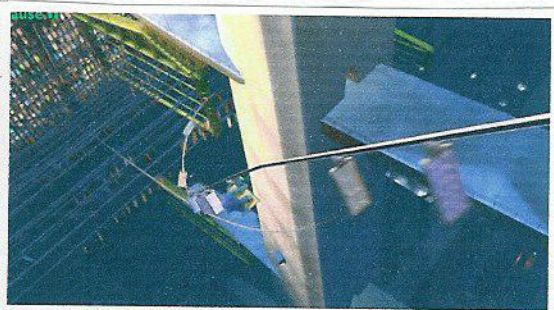


Space construction - Random element.
 No TWO spaces will be the same.
 Everyone's space will be unique



12E

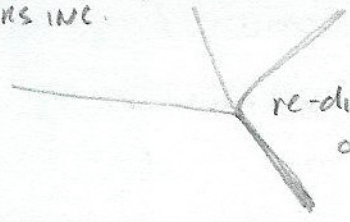




How much real world physics?

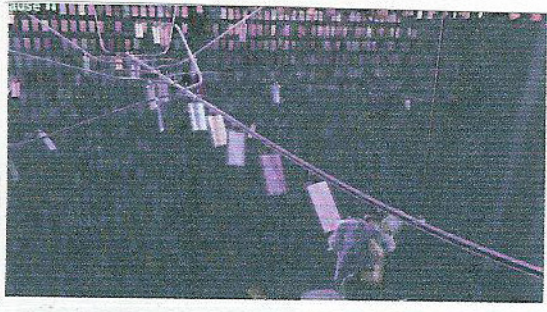
- The Databank.
- Library Shelves
 - Shelves, Piles, Rows, Columns

MONSTERS INC.



GOOD visual indication of stacking, filing system

Colours look good against dark background.



Reduce colour, ie single Hue. *

Increases perception of depth. Colours cannot make it through the "murk"

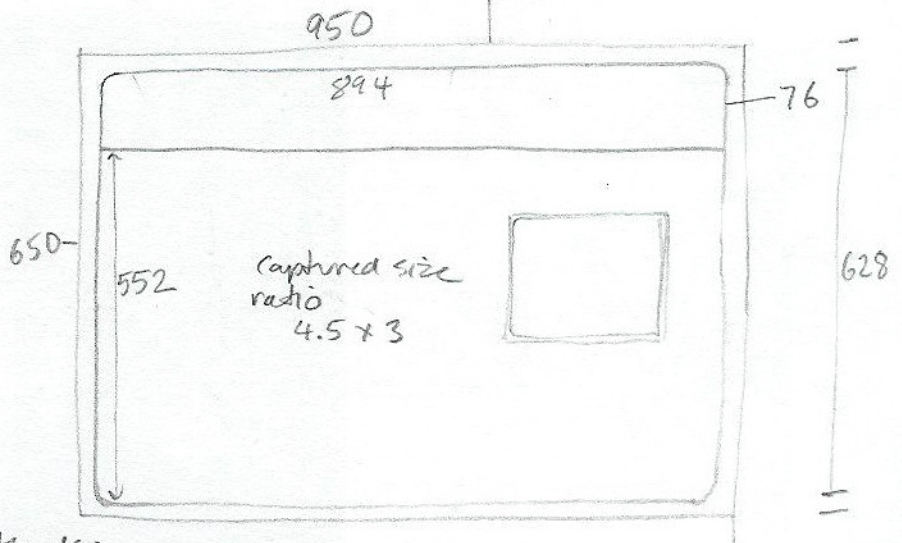
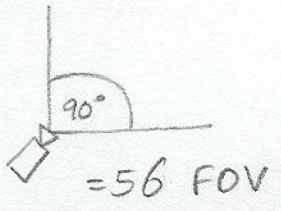
Axel Standalone includes a top menu bar - could also consider presentation mode in OMNI?

Axel Standalone or Quicktime Player

DEFINE FOV

28-50-70mm
wide angle. Too wide causes distortion
Try 28°

In Axel 90° = 56 FOV



3 Methods:

1. Present in Quicktime - standalone - all faked
2. Present in Standalone - " " " " } All faked.
3. Present in Browsers - change work area

Call javascript

Axel call javascript, that has already been defined in the host web page.

Eg:

1. Use Behaviours to create a pop up message. Note the Javascript that is created in the html head.

```
<script language="JavaScript" type="text/JavaScript">
<!--
function MM_popupMsg(msg) { //v1.0
  alert(msg);
}
//-->
</script>
```

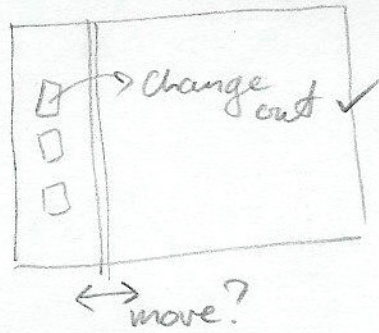
2. Copy the code, **inside** the quotes, from the html **body** into Axel

```
onClick="MM_popupMsg('Java doody called')":
```

3. Paste into Call Javascript in Axel

```
JavaScript: MM_popupMsg('Java doody called')
```

↑
This pops up in window



• Could also use layers to open & close windows / talk to windows

To be INNOVATIVE - do not feel obliged to conform to existing web surfing paradigm. Do not fit into a browser, make the browser fit into my concept.

Go with - AxelPlayer - full screen or window, with browser windows coming & going!

Open in Frame from Axel

* BREAKTHROUGH!

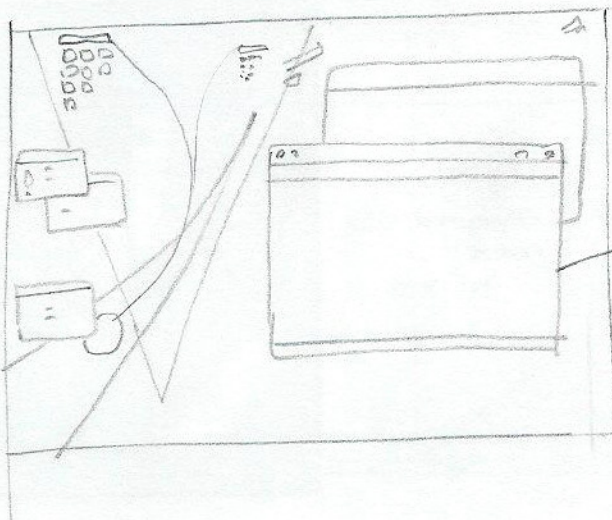
Use Behaviour "Open URL" to create Javascript to open in another frame. Copy and paste this into Axel - wallah!! 5 August 2004

The function:

```
function MM_goToURL() { //v3.0
  var i, args=MM_goToURL.arguments; document.MM_returnValue = false;
  for (i=0; i<(args.length-1); i+=2) eval(args[i]+"."+location+"="+args[i+1]+"");
}
```

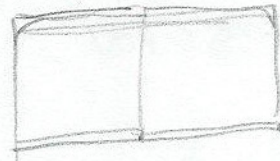
The code - this bit goes into Axel

```
MM_goToURL('parent.frames[\mainFrame\'],'two.html');return document.MM_returnValue
```



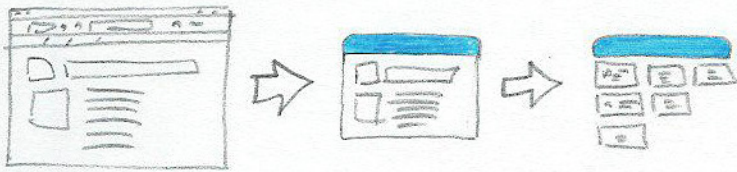
what do when shrink even further?

Axel max res = 512. Double up?



Browser should forego the banner-replace with banner that has new function - drag, hanging etc.

MAKE A 3 LEVEL GRID.



Why? Ability to drag groups of sites around.

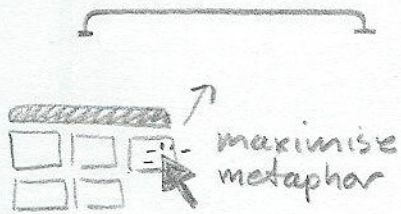
Perhaps Browser Banner remains of "Browser Hanger"



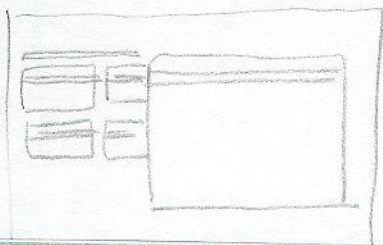
"Presently we control and limit our future by designing what is already known"

Born 1940, in Lansing, Michigan. Woods worked for Eero Saarinen and Associates and has been creating experimental projects since 1976. His visionary architecture is concerned with the cultural regeneration of society, directly confronting urban landscapes and social and political conditions presently undergoing radical transformations. His projects propose architecture as an instrument of social transformation. He is a co-founder of the New York-based Research Institute for Experimental Architecture. Currently, he is a Visiting Professor at Cooper Union in New York.

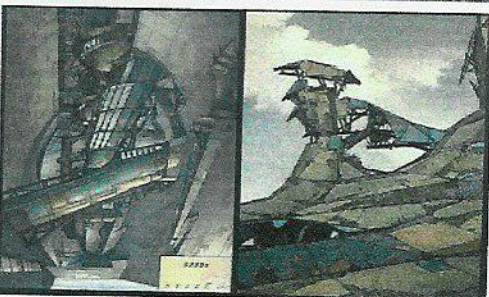
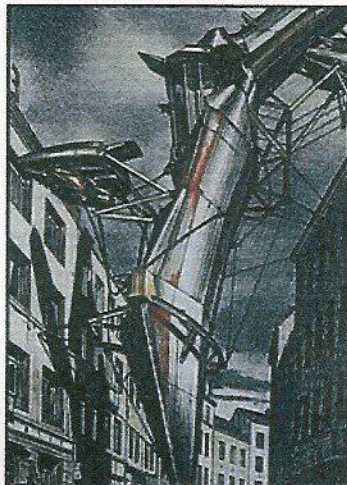
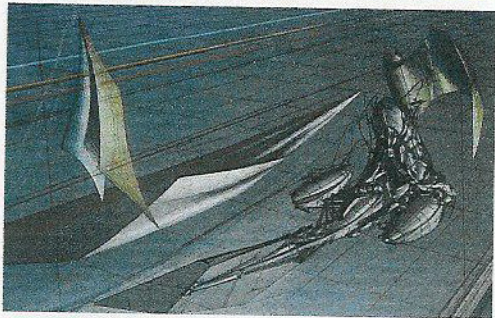
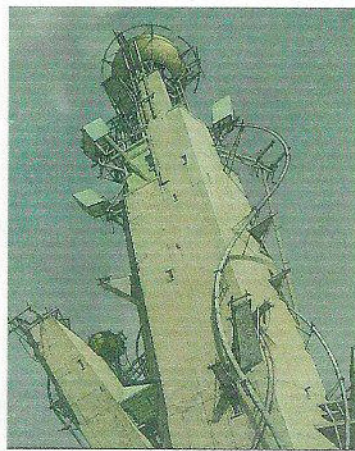
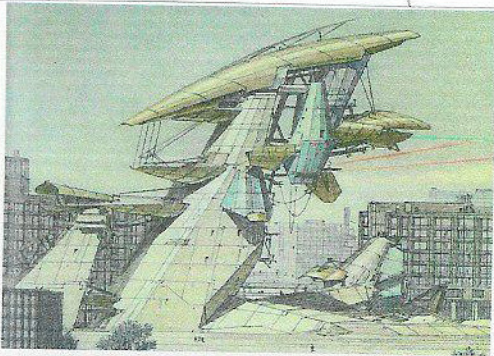
Lebbeus Woods →

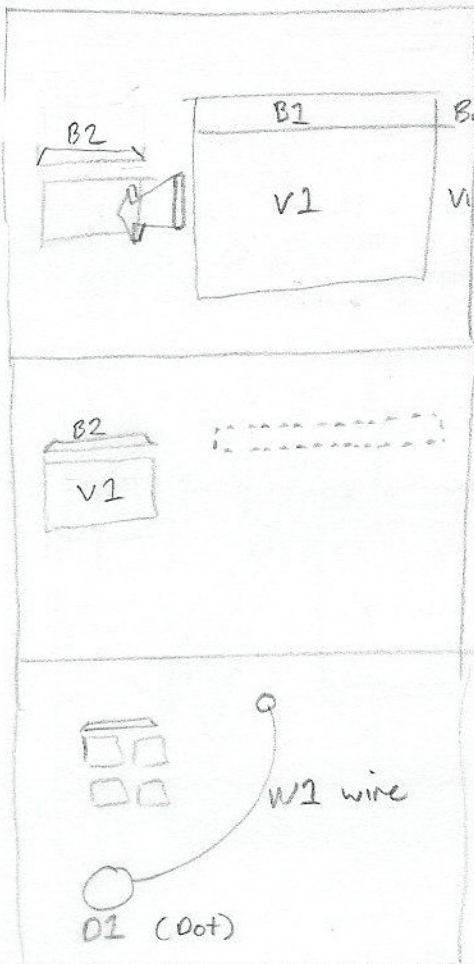
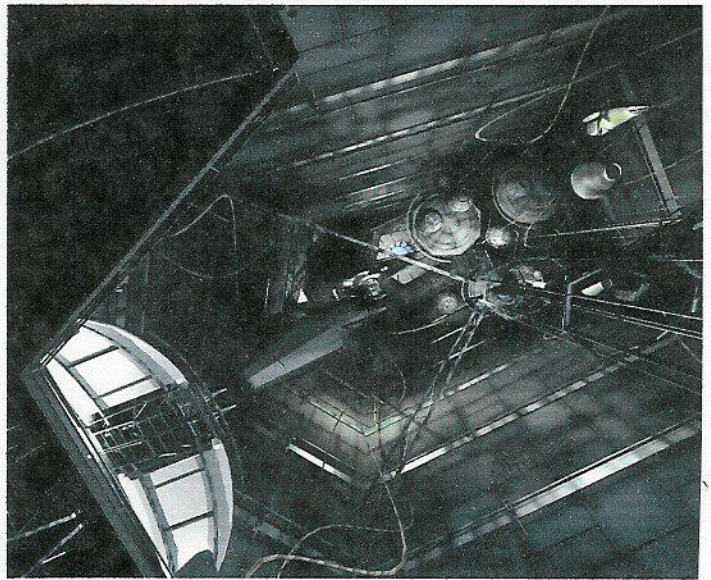
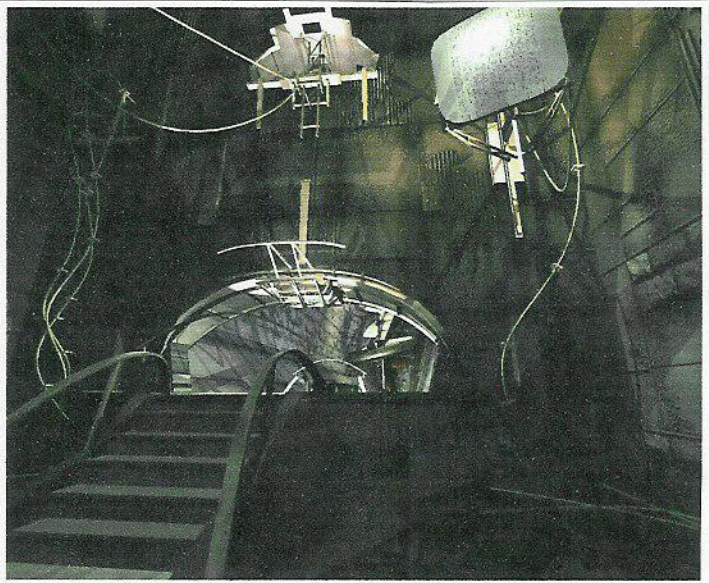
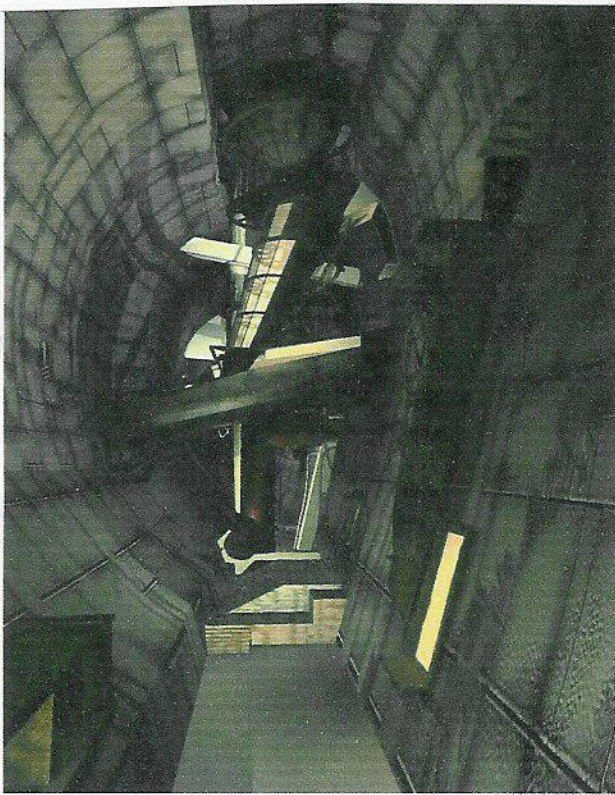


Keep browser banner to indicate ability to surf 1/2 iconed size?



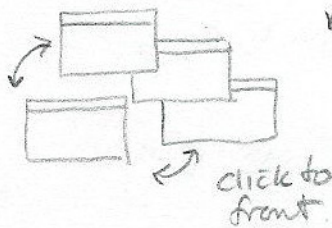
← why not have loose collection behind browser. what is gained by having a "coathanger" banner?



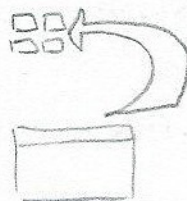


Banner 1 "B1" Why separate banners?

View 1



Mid distance "shuffle" zone



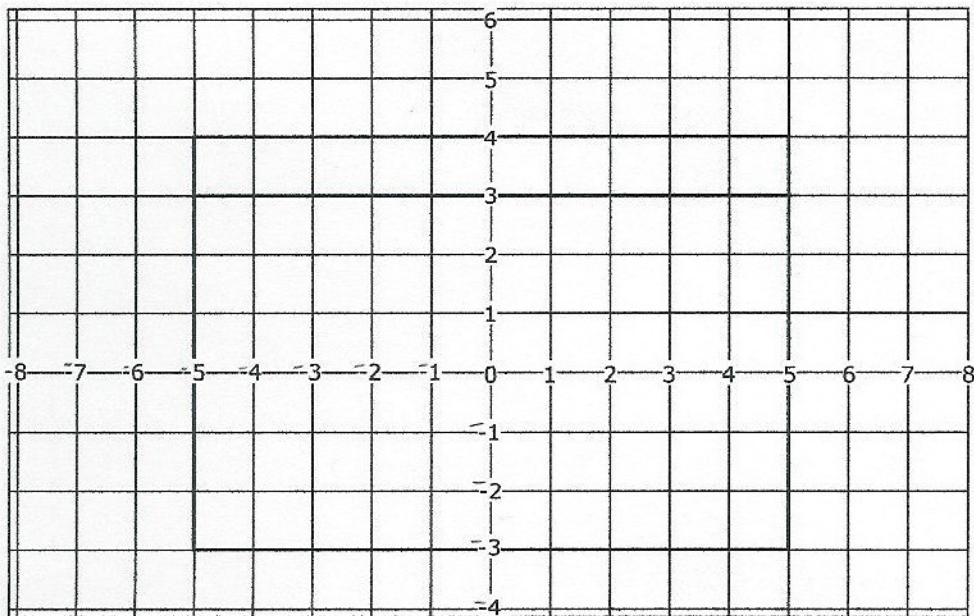
Ctrl-click zoom to back & auto arrange

NEED TO SIMPLIFY & IDENTIFY:

As history build:

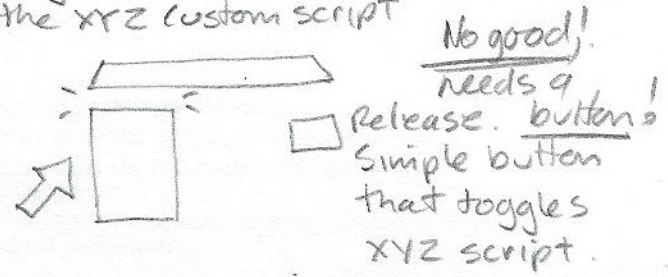
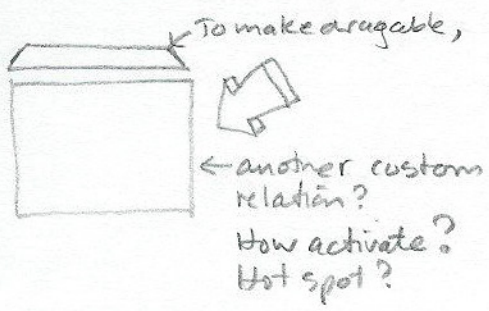
1. Where do the files stack?
2. What input does the user have?

X = Script
CX = Custom Relation



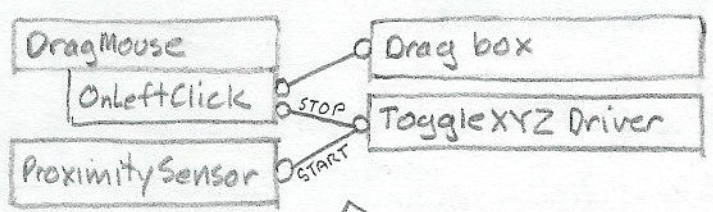
Web Cam Position
 Pos. 0 0 20
 Or. 0 0 0
 Scale 1 1 1

use proximity reaction to toggle the XYZ custom script



PTO BACK
 Need to develop a code language for Interaction Editor

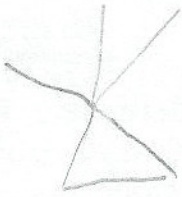
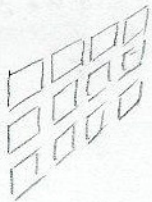
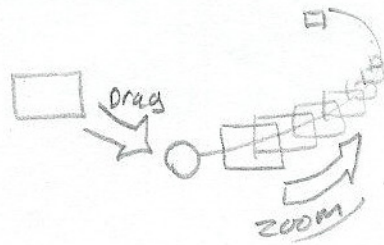
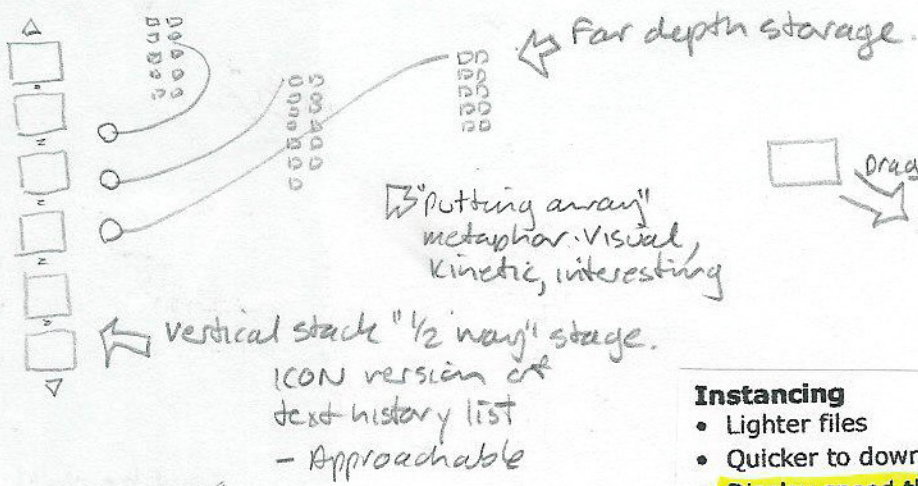
Better Much!



* SEE ALSO CUSTOM SENSOR IF/ELSE - 2 pages

↑ Note trigger modes:
 Proximity is always start
 Click is always stop - that way, whenever user initially selects object, they can move it!!
 See 21-Attach-Drag-Detach file.

CODE



How to deal with sheer amount of history filenames ?

- 1 • The list is generated anyway, & automatically as history.
- 2 • At what stage should the user select those to be filed & kept.
 - at browsing? - no! User is concentrating on searching, not storing
 - following a browsing session? - Yes - searching is over, user can now spend some time organising.

3 • Can history lists be organised automatically?
OR.

4 • Can the history list be accessed, sorted, & stored at any time.

↳ In which case, how is the information catalogued?

⇒ If we ask for user intervention, are we not at point 2 again

Instancing

- Lighter files
- Quicker to download
- Display speed **the same** as duplicating : since the computer still must calculate all objects on screen.

Manipulations (position, rotation and scaling) of the objects -when you are in Object mode ()-are independent.

An instance appears in the Project Manager and in the viewports, where it is offset from the original. You can adjust the instance's offset in the **Edit settings in the Project Manager**.

Unique Materials:

When you instance an object, the instances share the same material, however, you can then add a new material to any instance and it's added to just that instance. This single instance would then have an independent material, although geometries remain connected.

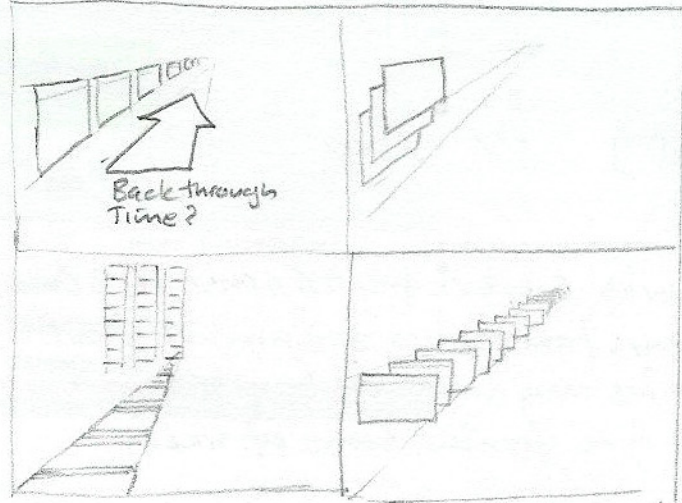
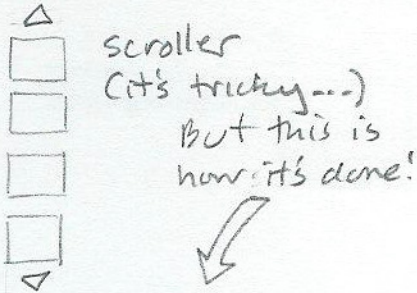
Duplicate - Offset and Array (?)

A duplicate appears in the Project Manager and in the viewports, where it is offset from the original. You can adjust how much a duplicate is offset by expanding **Author Settings / Edit** in the Project Manager, then typing a new value for **Duplicate offset** in the Parameter Editor.

TWO LISTS? -OR THREE?

- 1- First encountered
- 2- Last visited
- 3- Catalogued

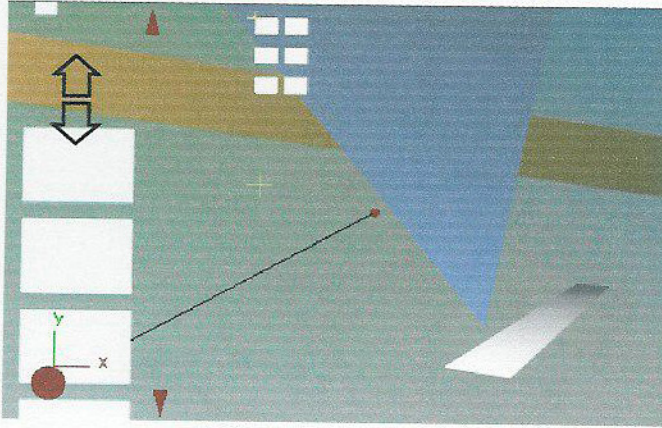
"Roadways" of history files?



Blue = -2.93 -1.17 1300
0 0 0
1 1 1

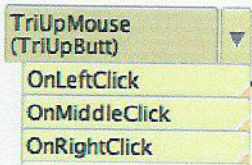
(could be dull!)
Emphasizes quantity
ie lots of cards,
queuing, lines etc

Scroller

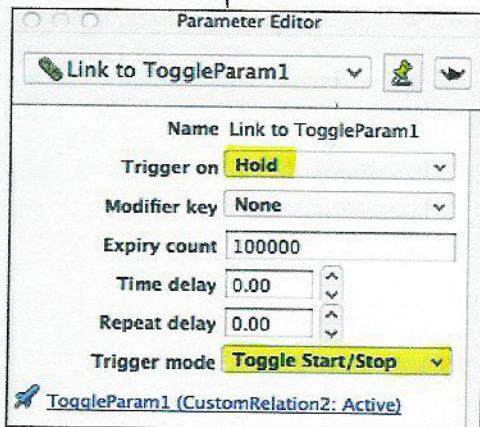
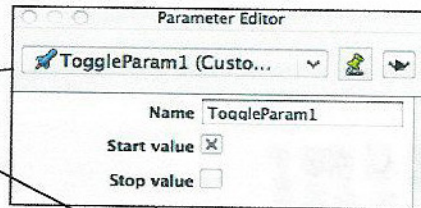


1. Give button **Mouse Sensor**
2. Select object or group's **translate channel**
3. Select **Custom Relation** (not reaction).
Write script.
4. Select **Script channel, Active**, select Reaction,
Toggle Parameter.
5. Change Mouse link to **Hold**, and **Toggle Start/Stop.**

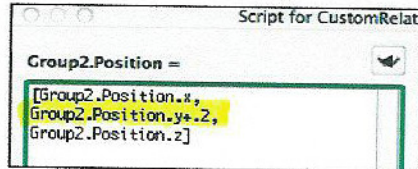
Reaction - Toggle Parameter.



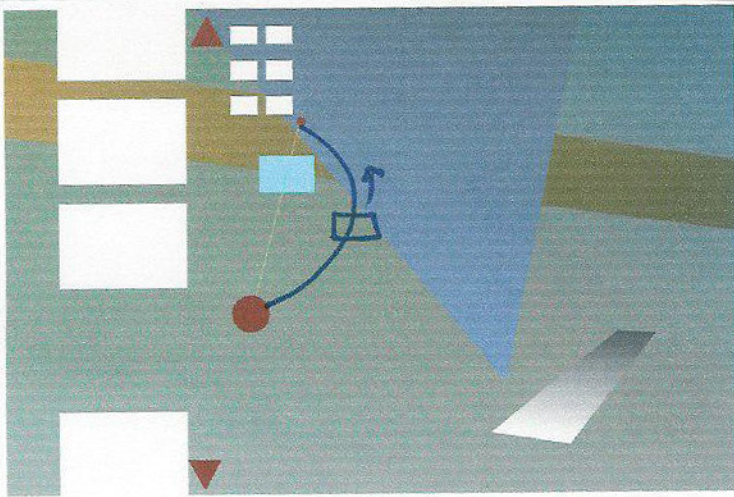
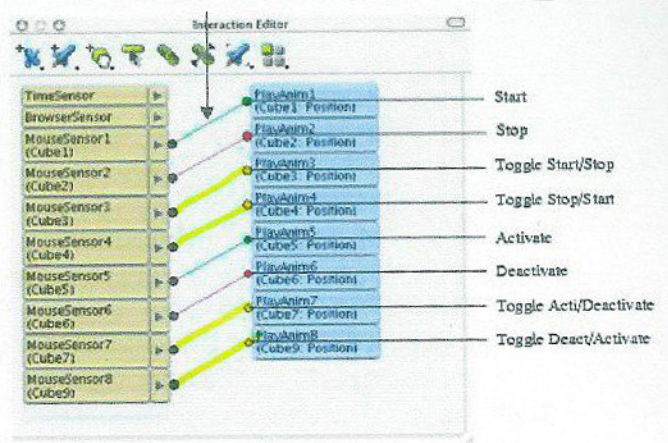
ToggleParam1
(CustomRelation2...)



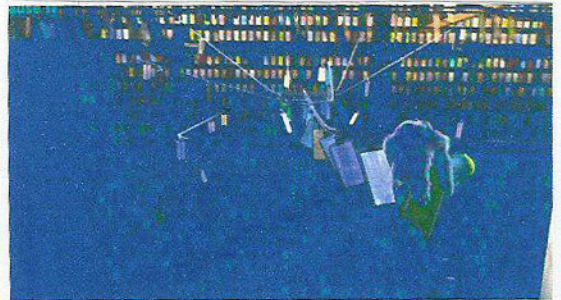
Custom Relation (Not reaction - which will not allow mouse hold)



works 0.14, but greatest sense of 3D comes from camera zoom in - very cool. wires may need to be longer (deeper) to give greater sense of scale.

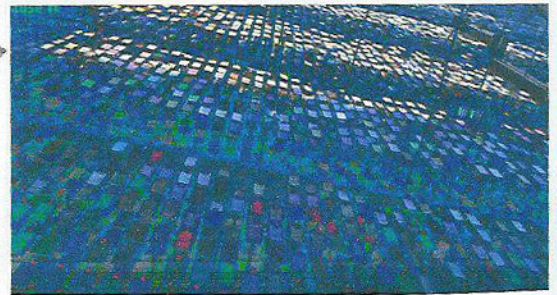
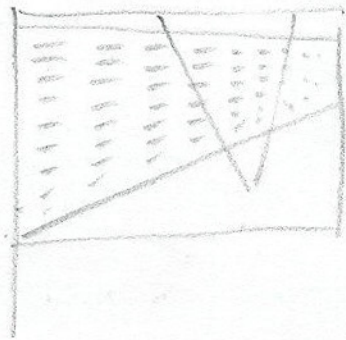
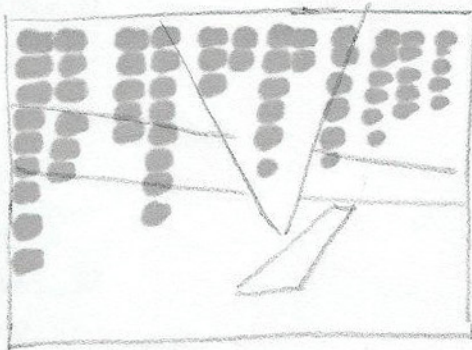


Scale!



⚠ Not sure about scroller. It's adding another interface metaphor - also is limited to eg 6 views at a time.

Perhaps files should just collect on 'back wall'
Vertical stacks = days / sessions / groups of 10...

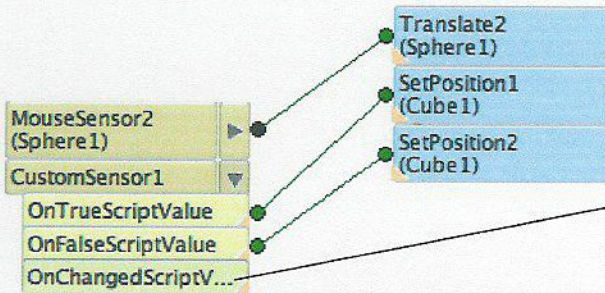


Link colours.

- Select material of 1
- Select other object
- Material link
- If other object is then instanced, material is returned.

If/Else

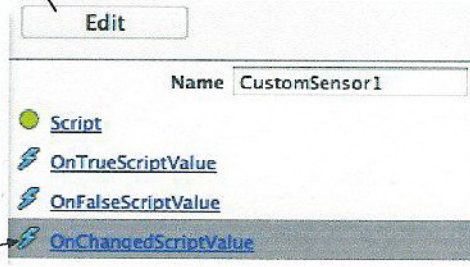
Use Custom Sensor to set up If/Else.
 Eg: If Sphere1's x position is greater than 2, then... link to normal reaction.



This last button allows access to Script window, which is otherwise in resources, etc etc

Trigger when value changes:

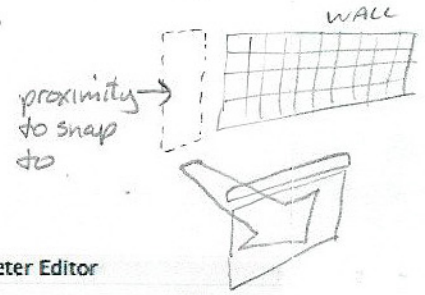
Sphere1.Position.x > 2



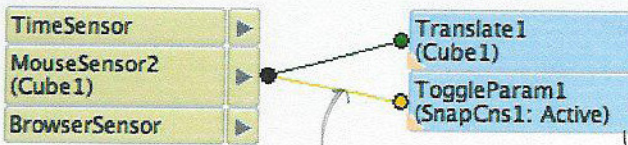
Perhaps ALL movement can be controlled by snap - using proximity sensors to toggle snap active off/on.

Best Snap Method!

1. Use the Snap Constraint in the Relate menu
2. Multi select the snap targets - these will stack up in the Parameter Editor - Nice and tidy, all in one place!
3. Use Toggle Reaction to turn the snap off and on while dragging (if you want to).
4. Clean layout in interaction editor too



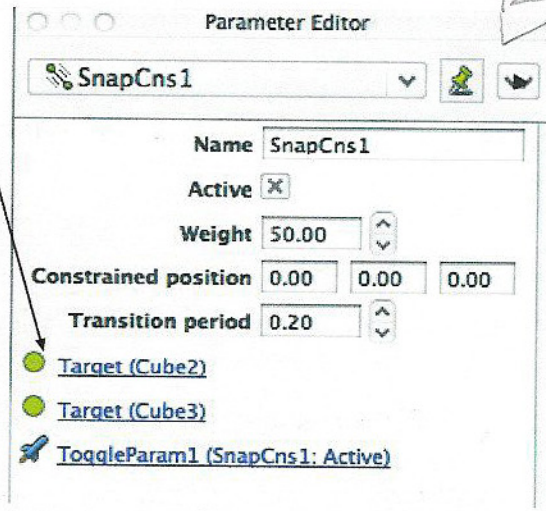
Using Snap Constraint under Relate menu
Drag toggles active



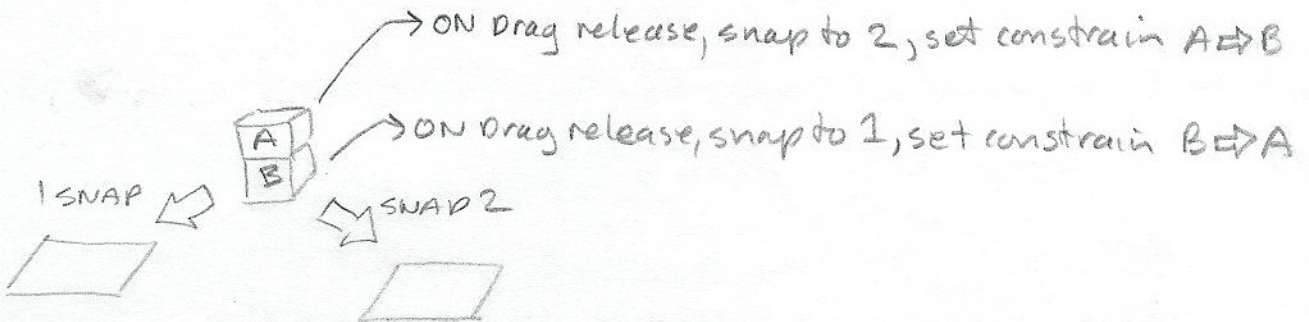
Hold Toggle Stop/Start

Start Value
 Stop Value

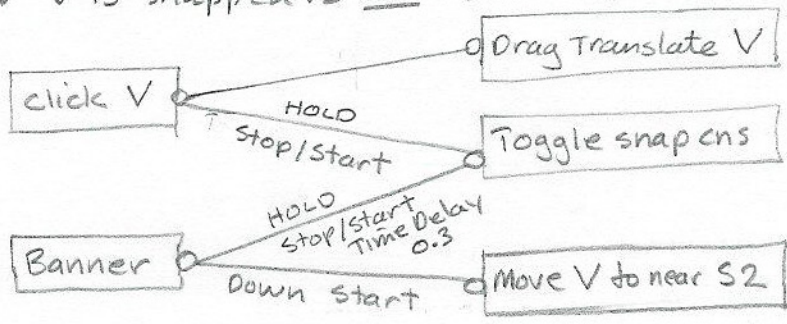
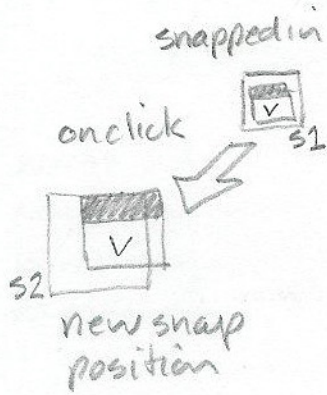
(opposite of ↑) and also Active



Basically - all objects "snap" from place to place!



- Banner is pose constrained to View panel.
- V is snapped to both S1 & S2



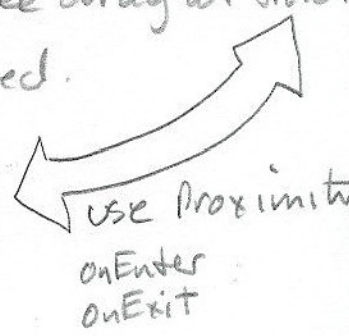
How this works:

When banner is clicked - V is moved to near S2

To use a click, not a drag, to reposition a snap-to location

- Snap is briefly turned off then on again - by using the "hold" time of the click.
- The delay lets the move "break free" of the snap.
- After 0.3 secs, the snap is re-enabled, and now snaps to the newer, closer S2.

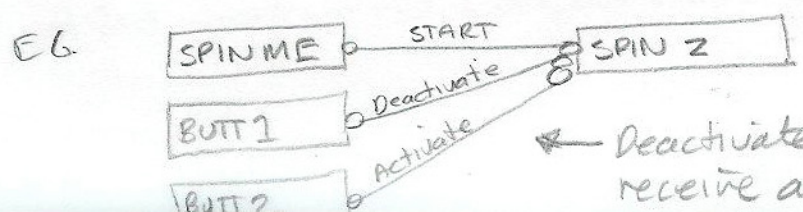
VERSION 2 - Using position triggers to all free drag at front
Both Stop and Deactivate are required.



This allows free dragging at $Z > 2$ without re-activating the snap constraint.

Now - How do we (simply) reverse this procedure?

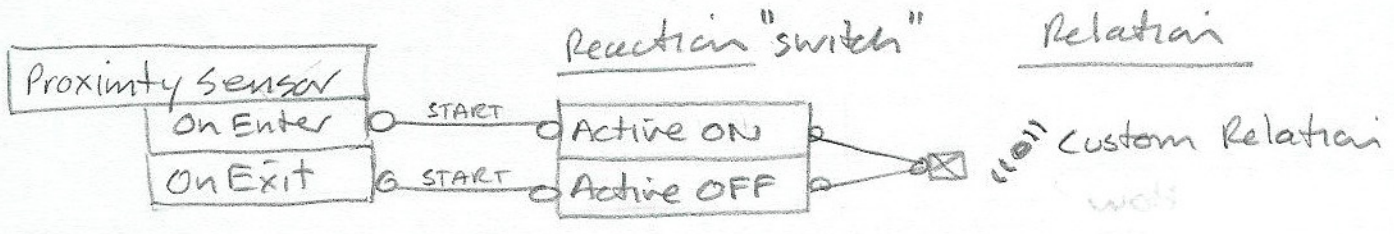
ACTIVATE command are SWITCHES - They make reactions work or not work.



Deactivate stops SPIN Z from receive any commands

Activate do NOT turn a reaction off, if the condition is not met. It simply does nothing.

USING LOCATION TO TRIGGER



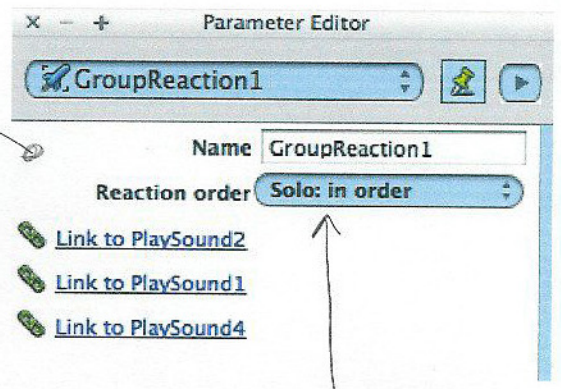
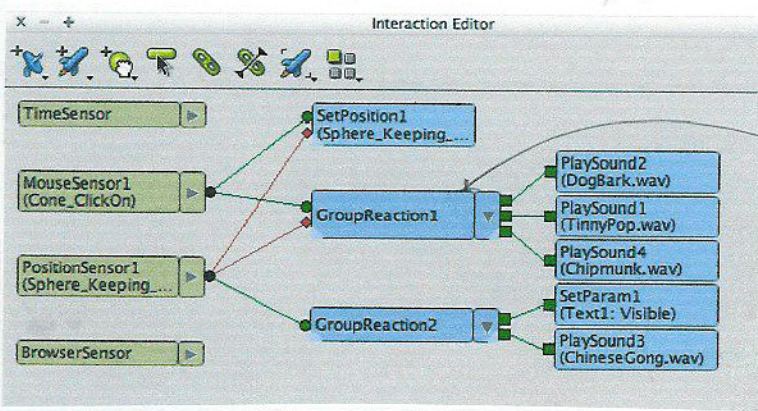
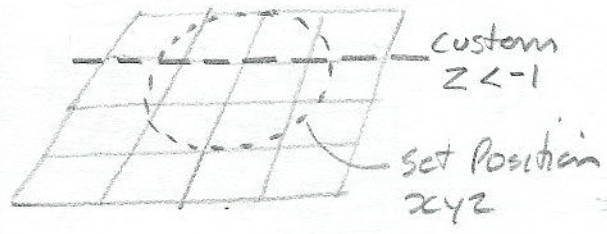
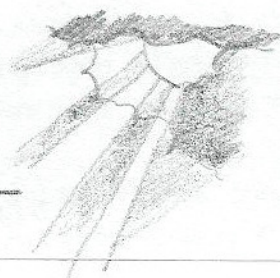
Consider: Use a script to provide movement, rather than Position Reaction, e.g. $x+1$ etc.

Custom are best!

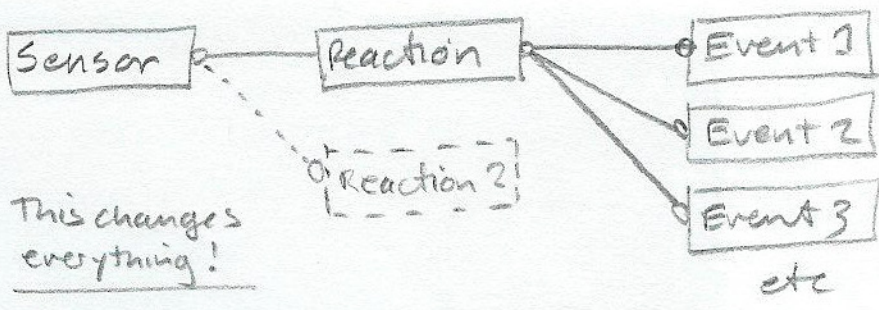


Grouped Reactions!

MAJOR REVELATION!!

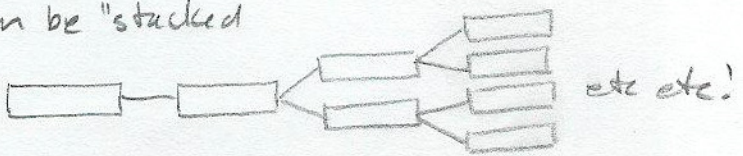


Events played Separately!

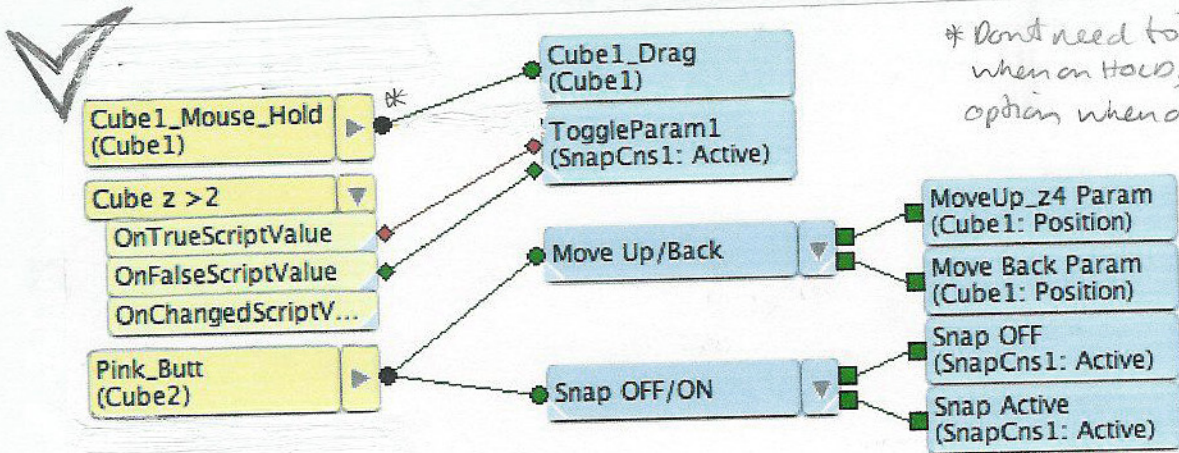


This changes everything!

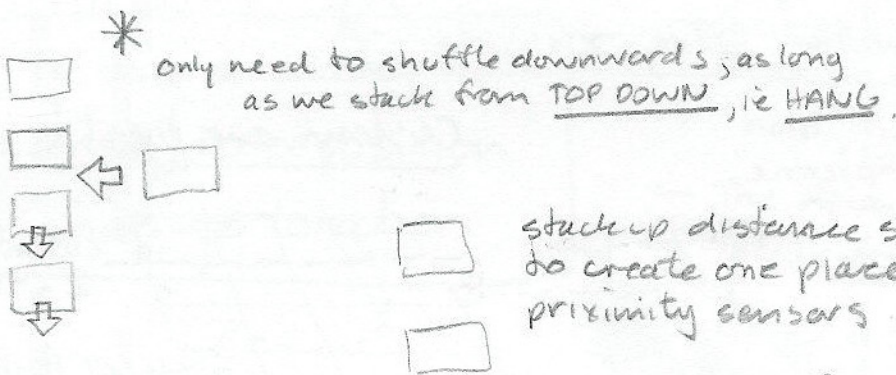
Can be "stacked"



THIS WORKS VERY WELL. Nicely modular (mostly)



* Don't need to deactivate snap when on Hold, use override option when dragging instead



Use Custom move Reactions - these do NOT trigger while dragging whereas Position reaction does!

stack up distance scripts to create one place proximity sensors

Use override (?) to force top piece to jump down

Maybe use hold to deactivate snap to allow top to move down

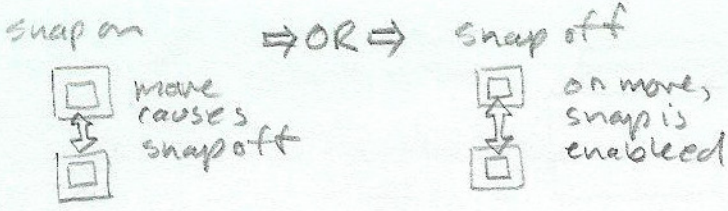
* Buggy Tip





IF you want to toggle a parameter ON/OFF, make the reaction with the parameter OFF empty

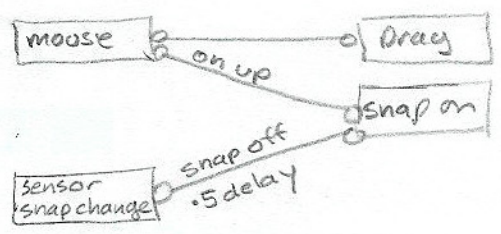
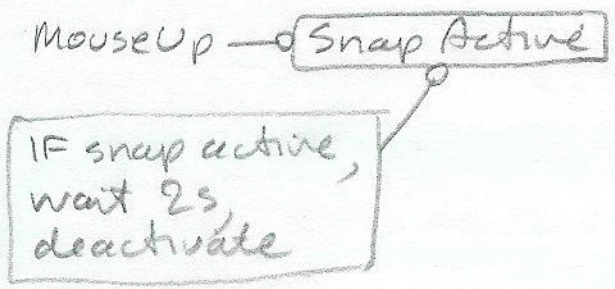
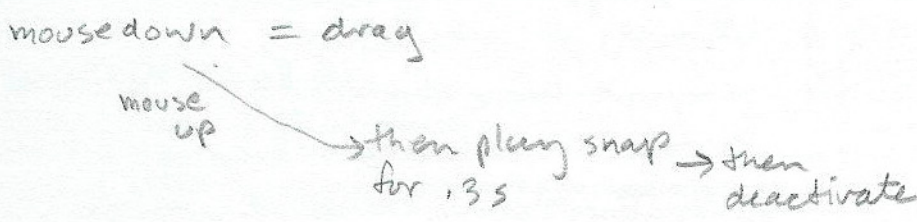
distance (Pink.Position, Blue.Position) <= 1 || distance (...etc) use || to mean "OR"

Trouble is - does not distinguish between the two, therefore, which one moves?

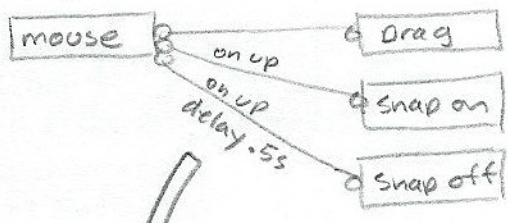
? IF TWO conditions are met, do they both trigger?



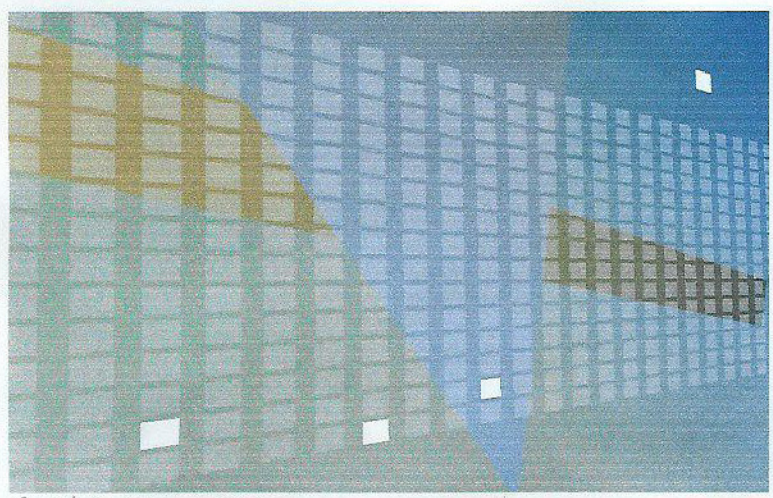
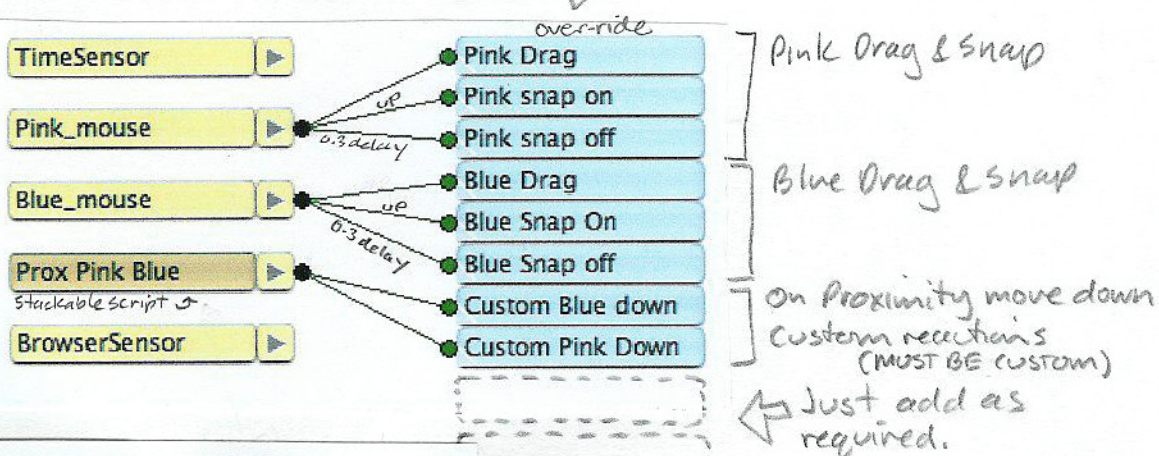
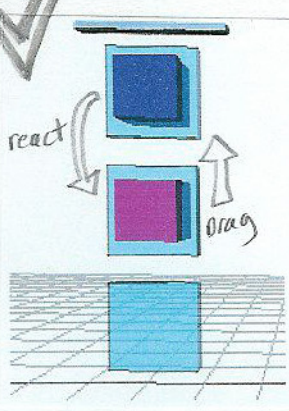
1.  Drag
2.  Let go
3.  Snap
4.  Snap off



OR

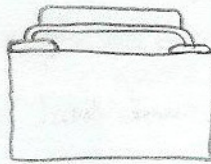
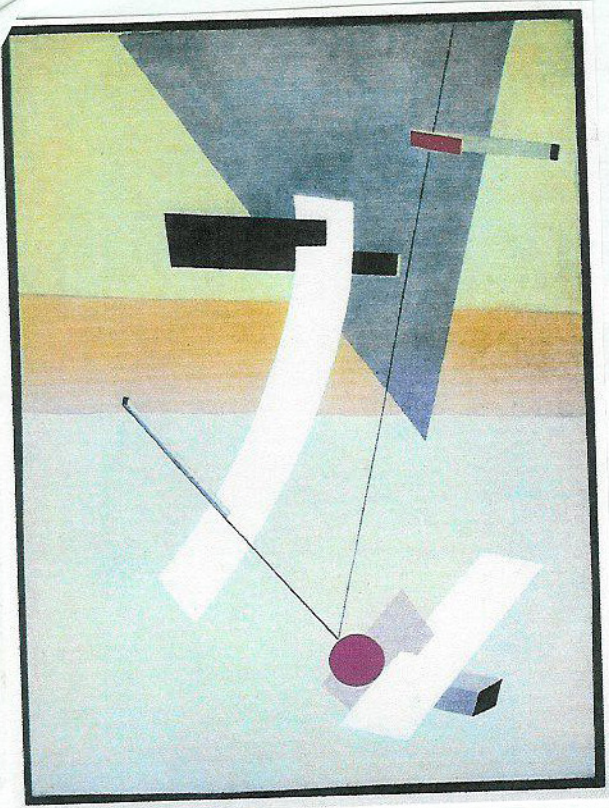


Need to try to keep all behaviours on the object, so as to keep assembly as modular as possible. Modular = Flexibility

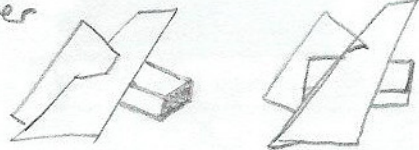


Cool, but no cookie

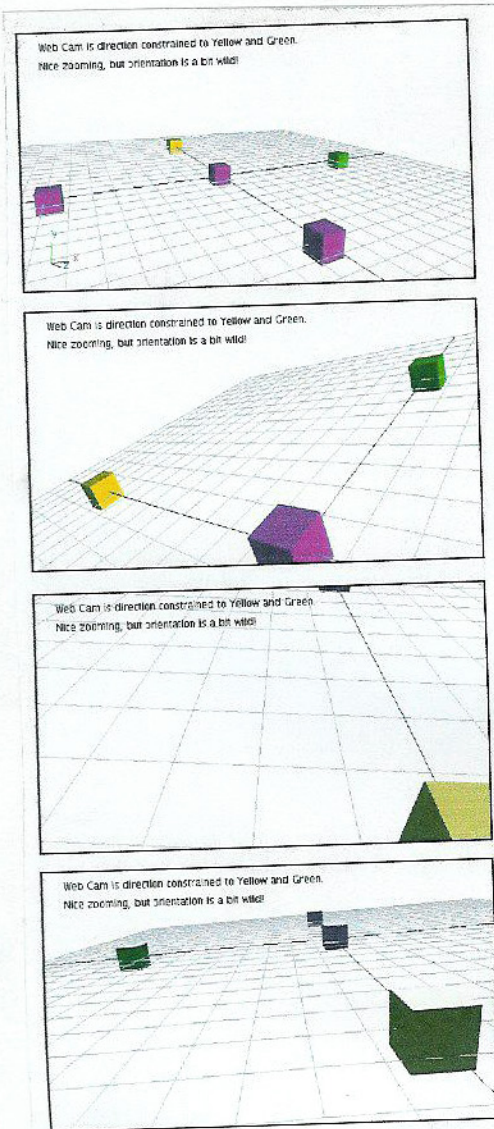
STOP!
 sure - might work - but not very "Lissitzky". Lissitzky's ideas have been reduced to a backdrop. Not really the initial plan!
 Also, technical probs of pages getting confused with snap zones, & confusing selection.



Lissitzky talks of exploring the space.
 VR talks of virtual landscapes.
 Why not have the environment
 "contain" the web pages. Pages do not
 need to jump to the front - instead,
 the user
 can
 jump
 to the
 web pages.



- 2 ISSUES TO ASCERTAIN: 1. = Model up a complete space. Perhaps model in Maya first, Use as template in Axel?
 2. = Need to establish a fluid user/camera motion
 All in axel.

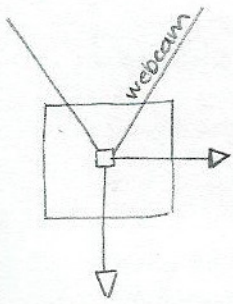


Click on yellow - camera moves to position by Yellow
 - However, camera orientation is controlled by constraints to both yellow and green. VERY interesting.
NICE movement, FLUID!
 Need to control transition - look at weighting the constraints, and deactivating those not relevant.
 These options potentially could be controlled by the user!

Constraints could be used to control orientation - setup on triangle: keep two elements in site:

- 1 - Aids user orientation
- 2 - Aids Web Cam orientation
- 3 - Simplifies camera placement.

We could script: on click, cam XYZ = box XYZ
That's elegant! Constraints take care of everything else.



Pose constraint defaults to this

Transition times with pose do NOT work!

Turning things ON & OFF:
Can do with script:

- Select Active
 - Custom Reaction, Blah.Active =
- 0 OR 1
OFF = ON

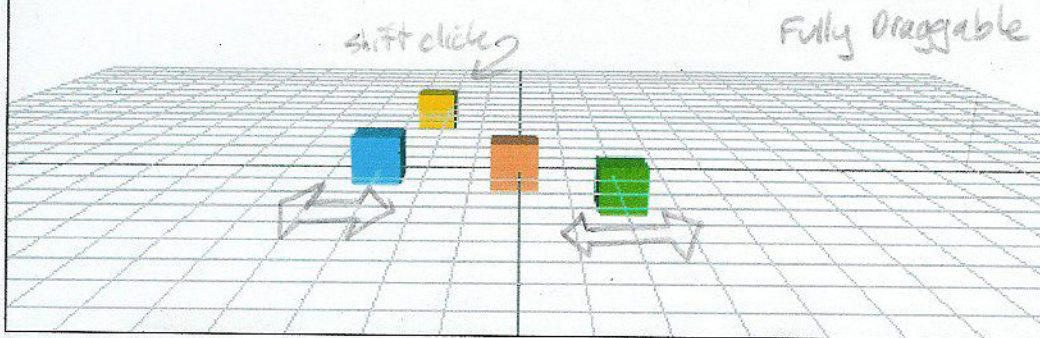
Spring constraint parameters

Active	Toggles the constraint on and off.
Rest length	Determines the distance in units at which the object comes to rest vis-à-vis the leader. For example, if the rest length is 0, it comes to rest on upon the leader object. If the rest length is 2, it comes to rest 2 units from the leader.
Springiness	Determines the strength of the spring. A low value makes the object slowly spring back to its original position, whereas a higher value tightens the spring making the object bounce quickly into place.
Resistance	Attenuates the strength of the bouncing. A higher value makes the constrained object or group seem to be moving through molasses!

CAMERA ZOOM TO DRAGGABLE TARGET !

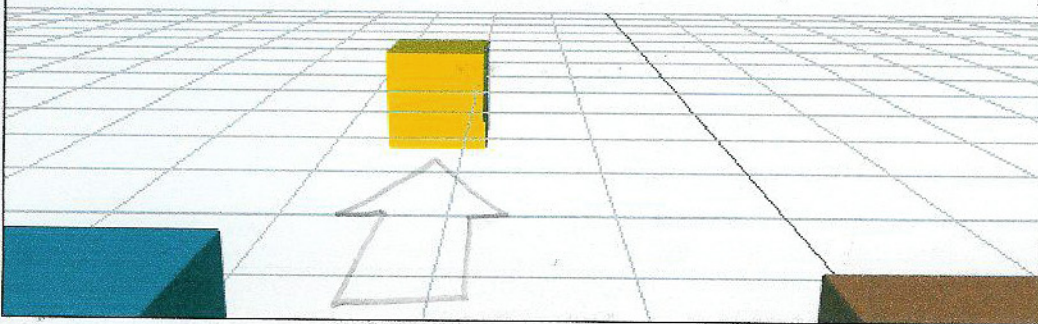
Shift-click to Zoom

Springs - very cool! Also grouped custom ON/OFF switches. Better than supplied!
Dont' worry about alignment to objects, could offset pivots, or target dummies.,
Note that we can drag the object, and the camera stays pointed! Very cool indeed.



Shift-click to Zoom

Springs - very cool! Also grouped custom ON/OFF switches. Better than supplied!
Dont' worry about alignment to objects, could offset pivots, or target dummies.,
Note that we can drag the object, and the camera stays pointed! Very cool indeed.




Camera zooms only on shift-clicked item.

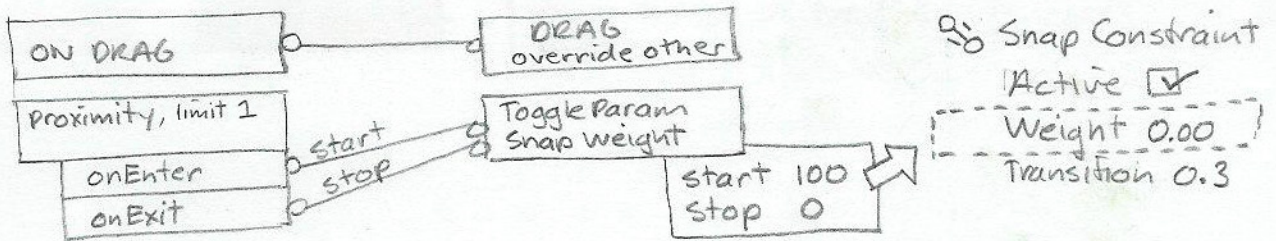
Astonishingly
Difficult to do!

File 39 zoom-to-draggable-target.

PERFECT DRAG AND SNAP!

VERY Modular
behaves as it should!

Gets close  And, user can drag off easily

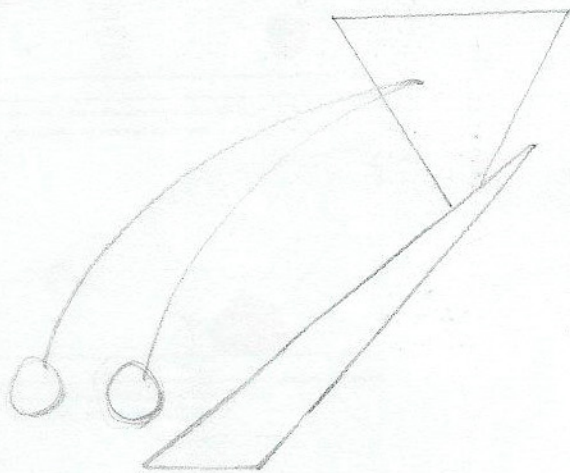


Megalith?

Create construct "units"
- these can be randomised
in Axel easily - no need to
do this in Maya

NEXT TASK !!

Design the form ---
≡≡≡

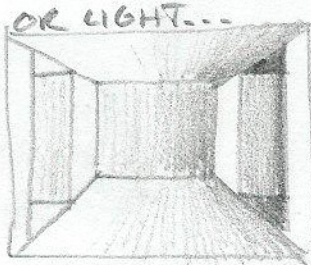
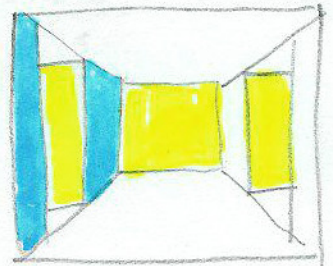
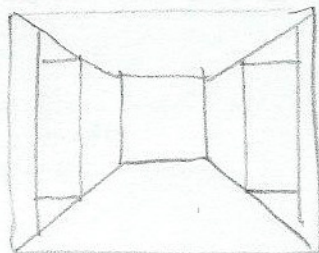


"Road"
VR conceptual
anchor.

SMALL LARGE
280 x 150 400 x 250



Games orientation
colour coding?

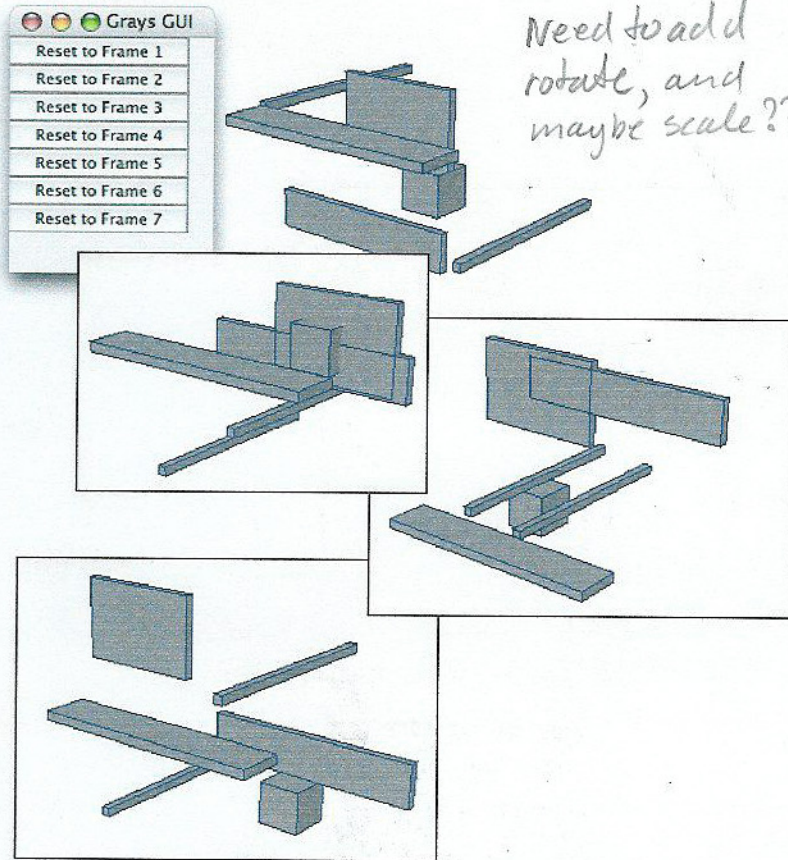


How do we construct more
constructs? Set up rand to
create, following principles?

Construct Builder : How to create forms within a style, with a certain amount of originality and "randomness", without being too contrived. By using the rand function (random) in Maya, we can create new compositions in space, that fit within certain parameters, but still retain freshness. Unlimited variety. Question for later: should this be offered to the user as part of the interface?

Using frames to trigger event:

The rand function cannot be triggered directly from a window button, so I use the button to trigger frame changes, which triggers the Expression I wrote :Random. This turned out to be very handy, as the different frames can be linked to different actions.



Expressions code:

```

if (frame == 1) {
b1.translateX = rand (2, 8);
b1.translateY = rand (2, 8);
b1.translateZ = rand (2, 8);
}
if (frame == 2) {
b2.translateX = rand (2, 8);
b2.translateY = rand (2, 8);
b2.translateZ = rand (2, 8);
}
if (frame == 3) {
b3.translateX = rand (2, 8);
b3.translateY = rand (2, 8);
b3.translateZ = rand (2, 8);
}
if (frame == 4) {
b4.translateX = rand (2, 8);
b4.translateY = rand (2, 8);
b4.translateZ = rand (2, 8);
}
if (frame == 5) {
b5.translateX = rand (2, 8);
b5.translateY = rand (2, 8);
b5.translateZ = rand (2, 8);
}
if (frame == 6) {
b6.translateX = rand (2, 8);
b6.translateY = rand (2, 8);
b6.translateZ = rand (2, 8);
}
if (frame == 7) {
b1.translateX = rand (2, 8);
b1.translateY = rand (2, 8);
b1.translateZ = rand (2, 8);
b2.translateX = rand (2, 8);
b2.translateY = rand (2, 8);
b2.translateZ = rand (2, 8);
b3.translateX = rand (2, 8);
b3.translateY = rand (2, 8);
b3.translateZ = rand (2, 8);
b4.translateX = rand (2, 8);
b4.translateY = rand (2, 8);
b4.translateZ = rand (2, 8);
b5.translateX = rand (2, 8);
b5.translateY = rand (2, 8);
b5.translateZ = rand (2, 8);
b6.translateX = rand (2, 8);
b6.translateY = rand (2, 8);
b6.translateZ = rand (2, 8);
}
}

```

Maya Window GUI Mel script:

```

window -title "Grays GUI" -widthHeight 200 400;
setUITemplate -pushTemplate DefaultTemplate;
tabLayout -scr true -tv false;
string $parent = `columnLayout -adjustableColumn 1`;
columnLayout;

// Create the button.

string $button1 = `button -label "Reset to Frame 1"`;
string $button2 = `button -label "Reset to Frame 2"`;
string $button3 = `button -label "Reset to Frame 3"`;
string $button4 = `button -label "Reset to Frame 4"`;
string $button5 = `button -label "Reset to Frame 5"`;
string $button6 = `button -label "Reset to Frame 6"`;
string $button7 = `button -label "Reset to Frame 7"`;

// Add the command.

string $buttonCmd;
$buttonCmd = ("currentTime 1 "); button -edit -command $buttonCmd $button1;
$buttonCmd = ("currentTime 2 "); button -edit -command $buttonCmd $button2;
$buttonCmd = ("currentTime 3 "); button -edit -command $buttonCmd $button3;
$buttonCmd = ("currentTime 4 "); button -edit -command $buttonCmd $button4;
$buttonCmd = ("currentTime 5 "); button -edit -command $buttonCmd $button5;
$buttonCmd = ("currentTime 6 "); button -edit -command $buttonCmd $button6;
$buttonCmd = ("currentTime 7 "); button -edit -command $buttonCmd $button7;

setParent ...;
setParent ...;
setUITemplate -popTemplate;
showWindow;

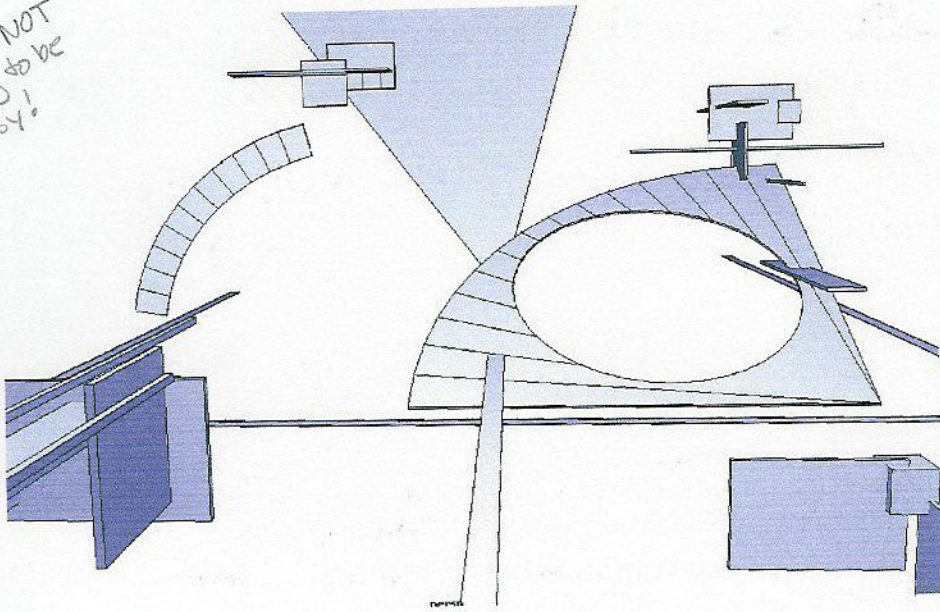
//-----

```

↖ This method may seem odd, but is MUCH easier than putting into one Mel script!

IT WORKS
Don't waste time trying to be more "efficient"

This is NOT going to be easy!

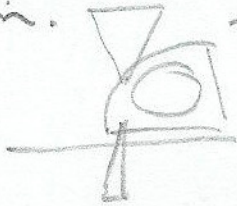


Attempt at environ construction, combining "constructs" and larger layout devices.

- Multiple floating constructs doesn't assist layout
- The large elements work well.
- Still have issue with composing the space, - Need to look further at letting software create unique compositions - within defined parameters

ALSO - what is the role of the floating constructs? As 3D-space locators, they seem to work much better at distance. Very unsure about usefulness up close.

COMPOSITION: Note that the few main shapes dictate the composition.

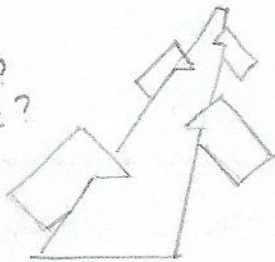


This is as it should be, and is true to Lissitzky space. The other elements are "feeders", dots, wires etc. Need to construct central compositions FIRST!

WHAT IS THE FUNDAMENTAL STARTING SHAPE?

- Box?
- Roadway?
- Grid? - Flat?
- wall?

End?
side?



Lissitzky's objects generally

Float in space,

which removes such devices as rooms, & roadmaps.

So - think of cityscapes that can be entered perhaps?

Not several "floating" constructs, why not one construct?

Cool - but again, its just a wall. Convinced!

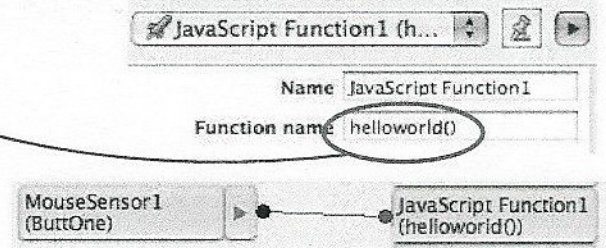


Getting JavaScript working

1. The JavaScript function in Dreamweaver:

```
function helloworld()
{
  alert("Yah Har");
}
```

2. The bit that goes in Axel



Changing frames and open new windows

1. First, use a temporary button in Dreamweaver in order to create the header script function.
2. Copy the code from the button into Axel. Do not include the speach marks.

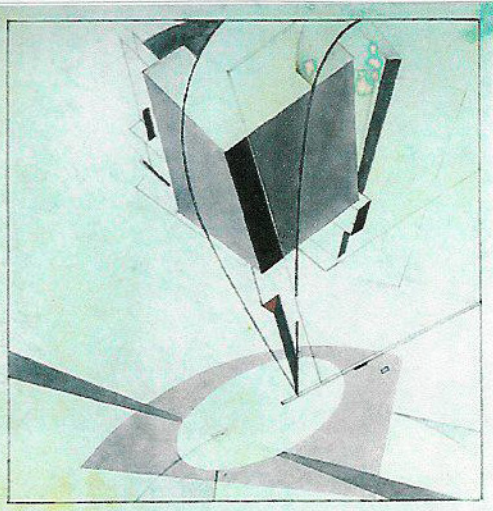
Both of these worked in Safari, pop-up worked in IE, and neither worked in Firefox!

Change frame

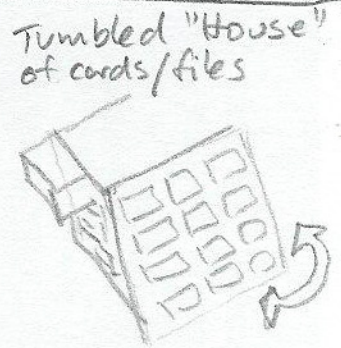
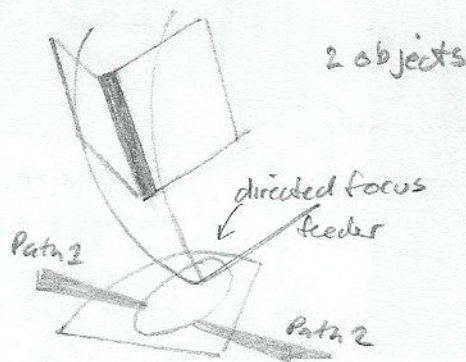
```
<p><a href="#" onClick="MM_goToURL('parent.frames[\mainFrame\'],'one.html');return document.MM_returnValue">One</a></p>
```

Open a new window.

```
<p><a href="javascript:;" onClick="MM_openBrWindow('one.html','metoo','toolbar=yes,location=yes,resizable=yes,width=555,height=333')"></a>
```

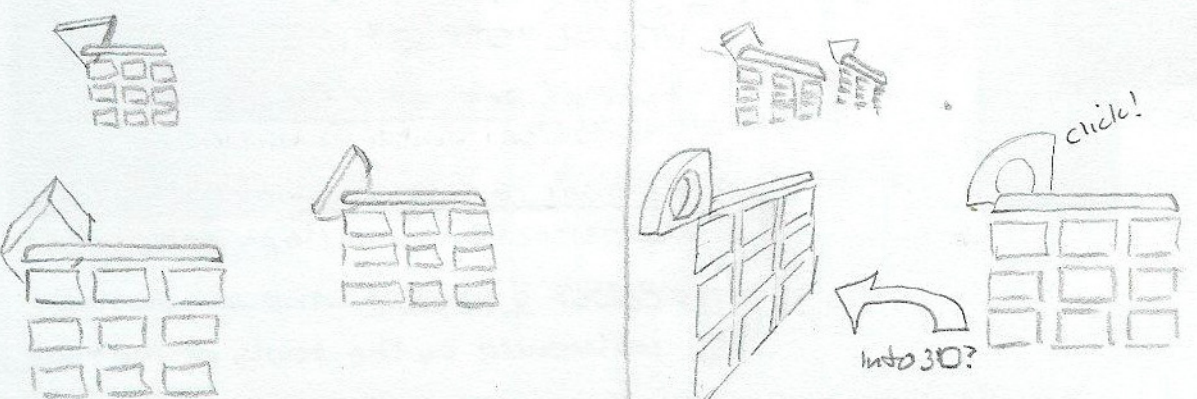


SA 1919



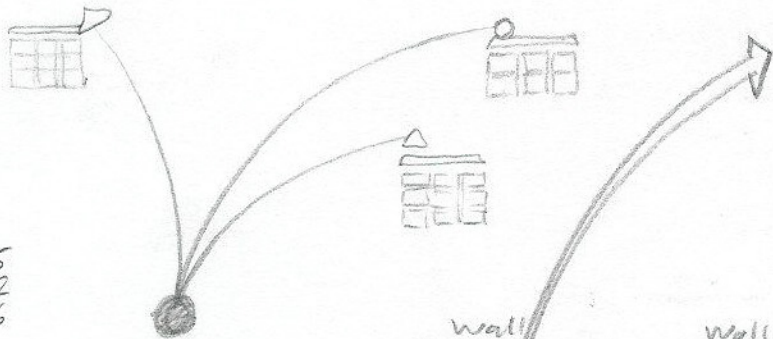
NEW APPROACH ⇒ How about utilising Lissitzky's space to "label" groupings of pages/files. Use 3D "tags", and user can arrange into 3D space!
Perhaps have "snap into perspective" function.

The User "creates" the 3D structure!

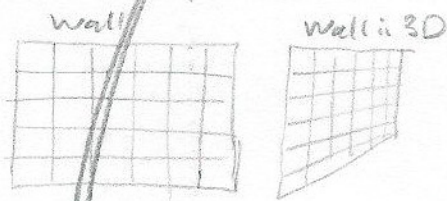


OR Tumble---

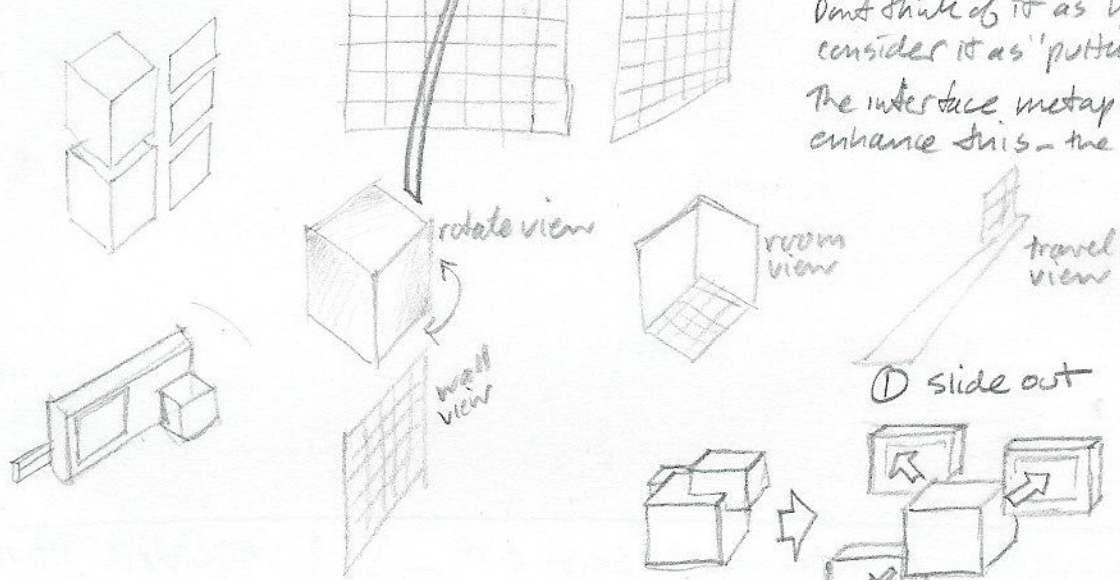
15
12
6



Revisit rotating object:
Main issue is hidden faces.
However: - All other methods have their own versions of hidden files:
- List - scrolling off screen
- Icons - become so small they lose recognition



Don't think of it as hidden faces, consider it as "putting away".
The interface metaphor should enhance this - the "hidden" aspect

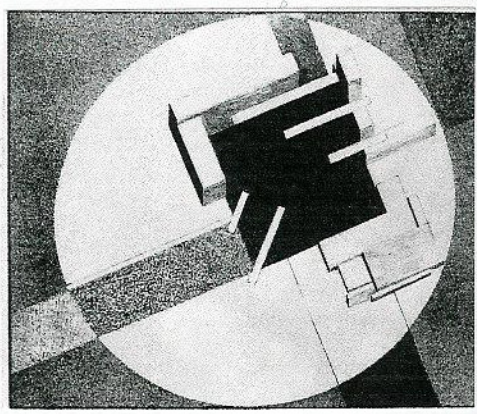


Page groups stack into unique shapes.

Also - consider that (sidedly) plus planes in space.

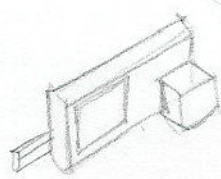
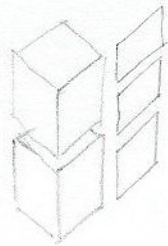
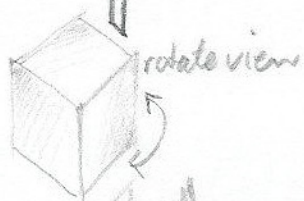
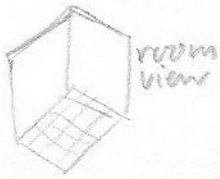
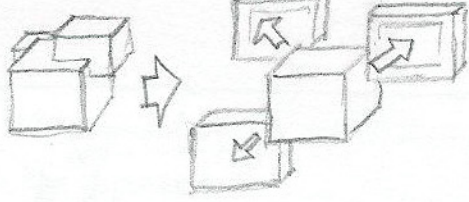
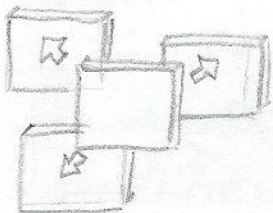
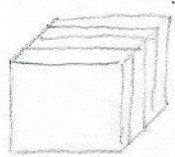
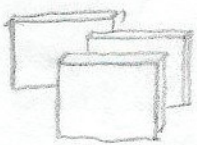
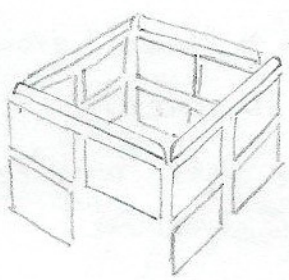
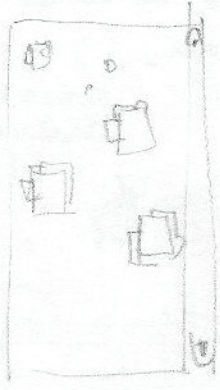
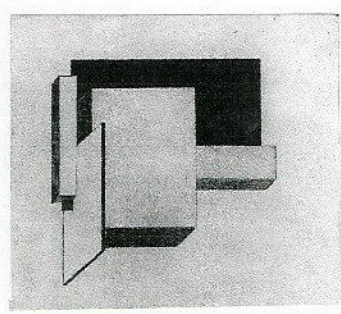
Why 3D? This technique does not need 3D!

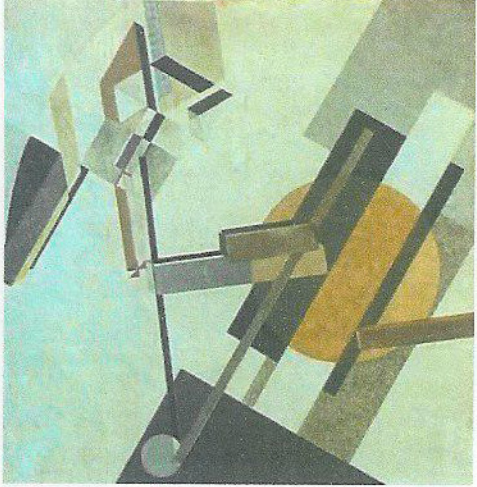
Ah, but to follow the visually spatial model it does!



THE ESSENTIAL CONSTRUCTIVIST VISUAL "STYLE" IS:

- use of geometric shapes - the universal building blocks
- planar composition - angles, intersections, overlaps, perspective
- colour & texture - though perhaps influenced by the tools of the time.

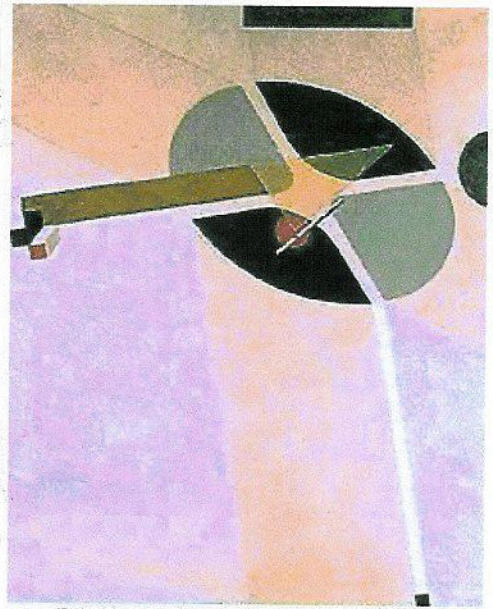




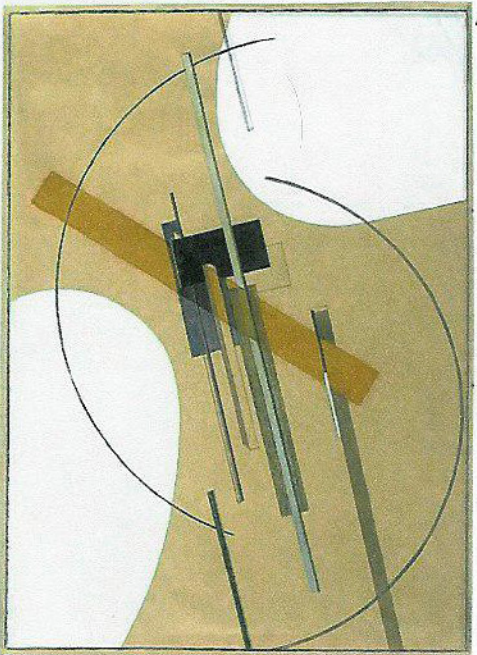
19D 1922

VARIATIONS:

- Less "constructed 3D"
- More planar - more about flat planes, turning & twisting in a 3D space.
- Note use of circle!

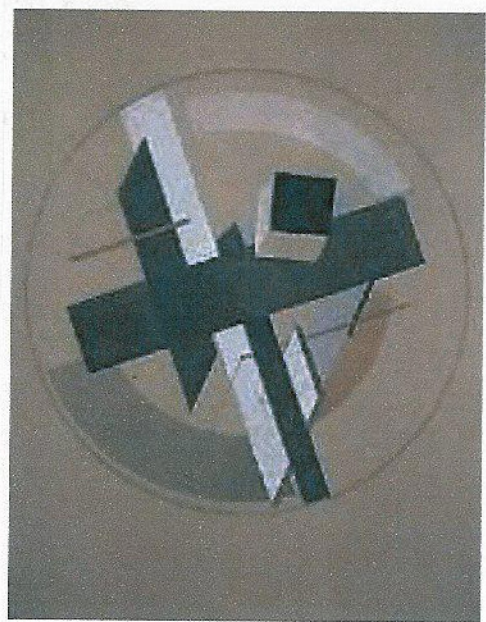
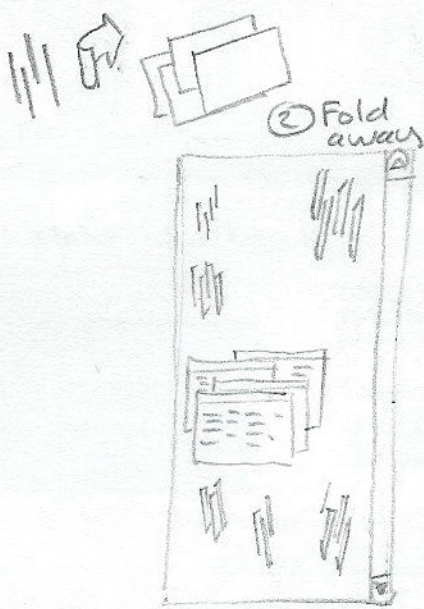


El Lissitzky: Proun G 7; 1923



"SK"

"Floating" ←



A 11




NOTE - Axonometric, not true perspective

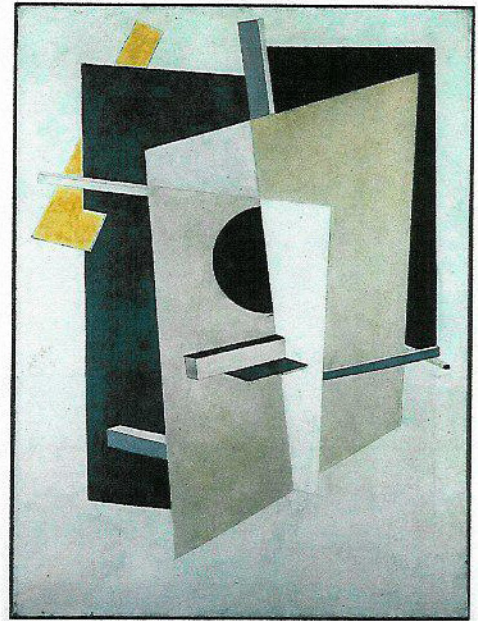
As the groups of folders approach the camera, their contents will be partially visible. The user will be able to partially scan before files "unfold"

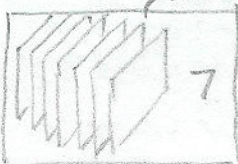
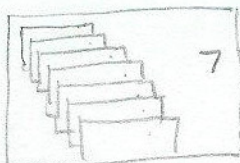
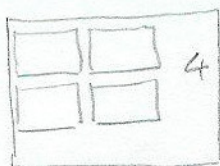


"Never"

Axonometric "Parallel Perspective"

- Isometric 
- dimetric 
- trimetric 





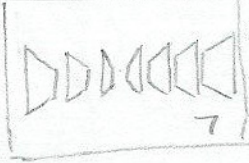
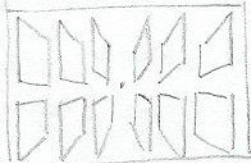
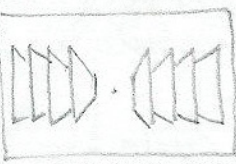
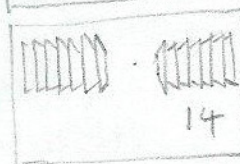
occluded

Recognition value



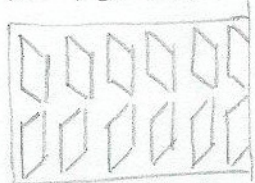
Better than stacking.

Using perspective to simply fit more stuff into a window.



Full view

12 - Full view

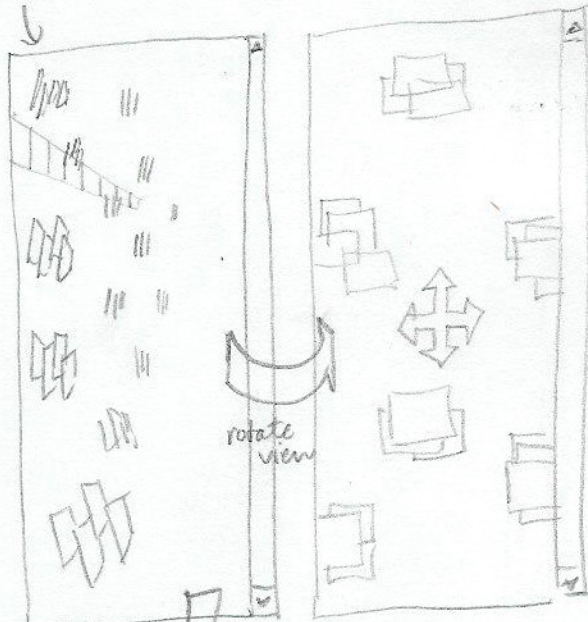


Axonometric - 30-confusing

How do these compose themselves?

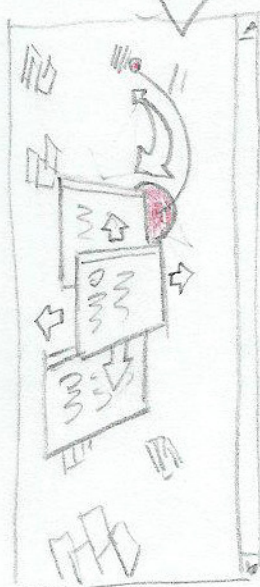
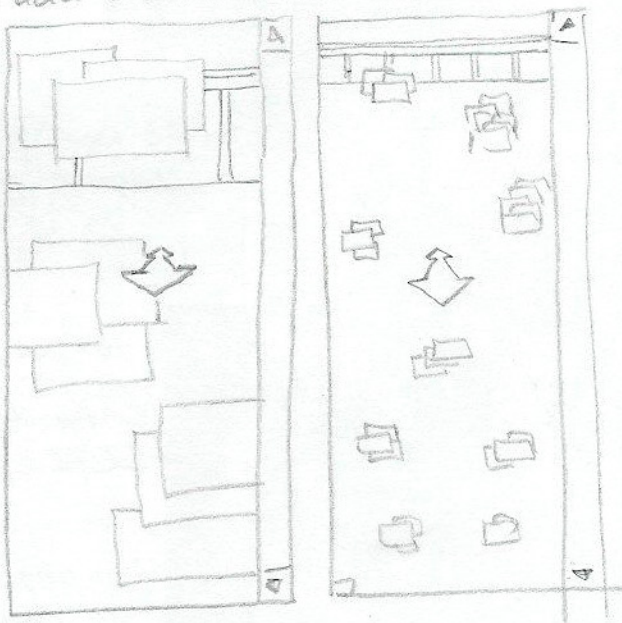


attached to a "hanger"? of varying colour & possibly shape



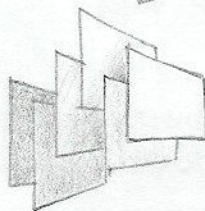
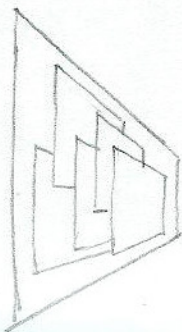
Function to allow browsing of clusters.

Should add scale function too

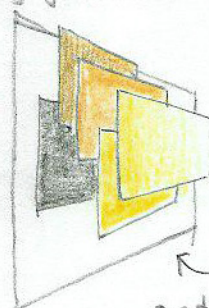


cluster of pages zooms up to view & partially unfolds - only partially so as to obscure the space a little as possible

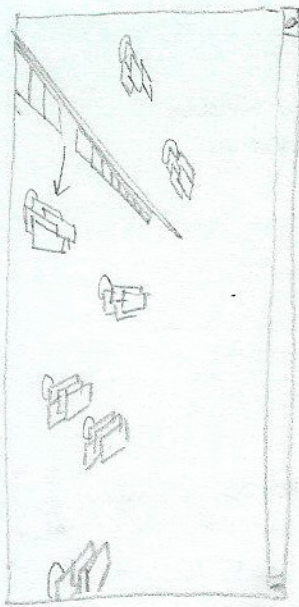
The clusters themselves will have shading & randomly generated stack positions



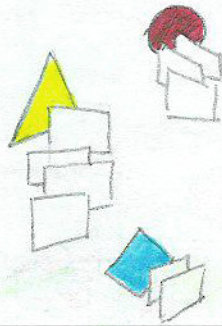
Random is good; re surprise reward. guaranteed(!)



The back shape has a stronger "window" feel.



History "timeline" - "descending into the past"
 Autogenerated. Chosen pages can be dragged down onto a cluster.

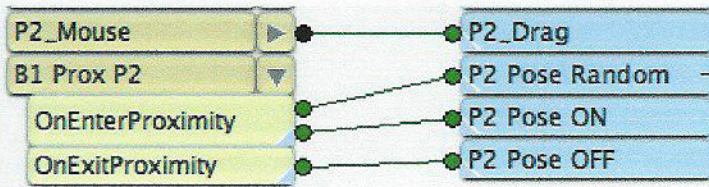
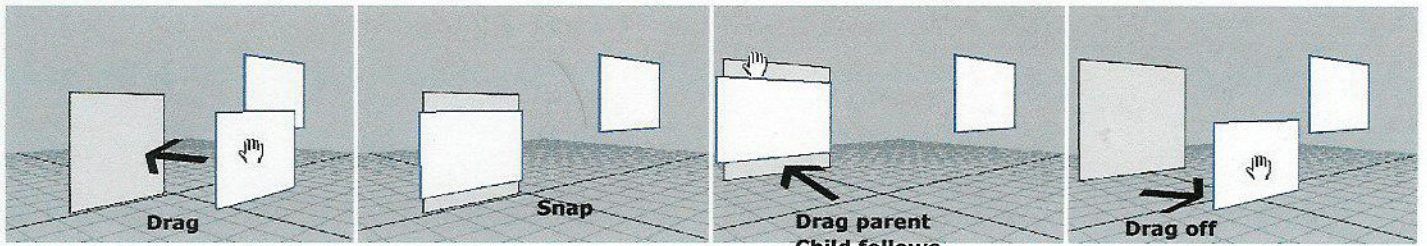


Basic Geometric Shapes as the handles. Vary in Colour.

Custom Reaction to ascertain position

Custom Relation to maintain snap, BUT this will reposition the centrepoint!

Users simply selects the handle of choice, & collects pages!



Offset parameter of Standard Pose Constraint between B1 and P1
 PoseCns1.Position_offset = [random(0,1), random(0,1), random(0,1)]

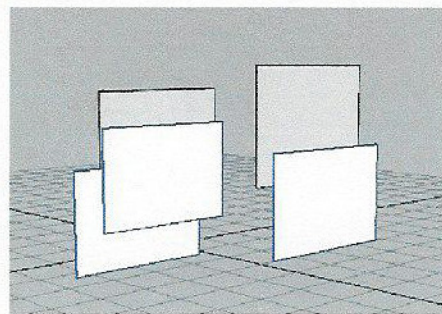
- Material31 (p2)
- P2_Mouse (p2)
- PoseCns1 (B1)
- P2_Drag (p2)

Custom scripts



Use Import

- Import an Axel file & all constraints, scripts etc are imported
- Objects are auto named.



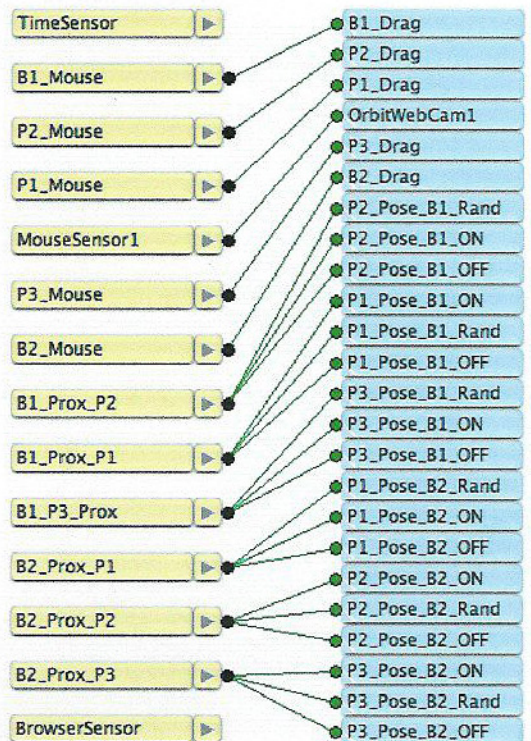
Code schematic for only 5 separate objects!

That's:

- Each relation = 3 nodes
- Each object = 1 node (Drag).

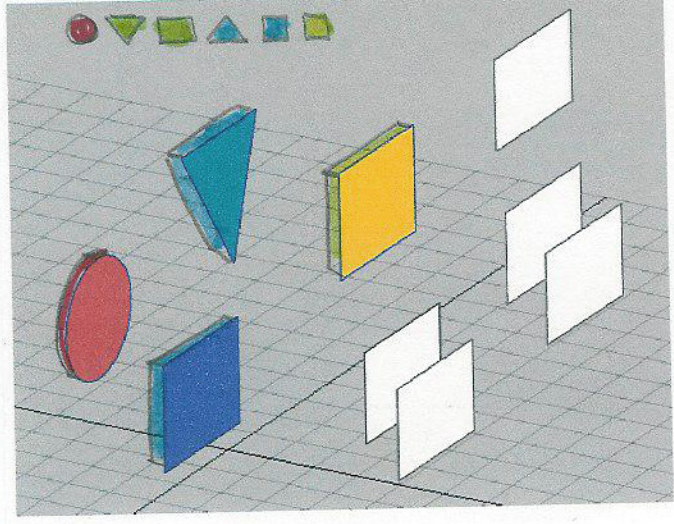
So far 5 Base objects & 10 pages:

- 150 Relationship's
- 15 Drags
- = 165 nodes

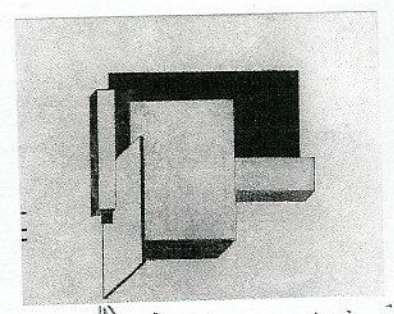
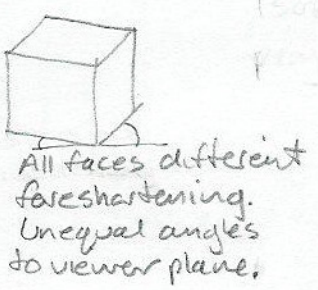
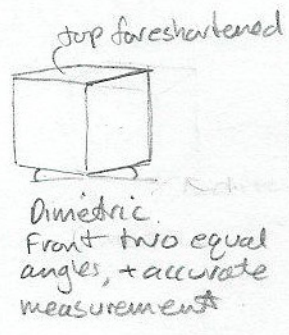
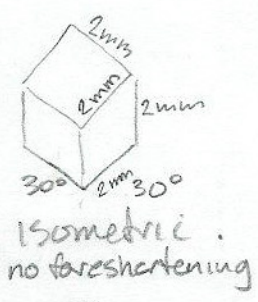
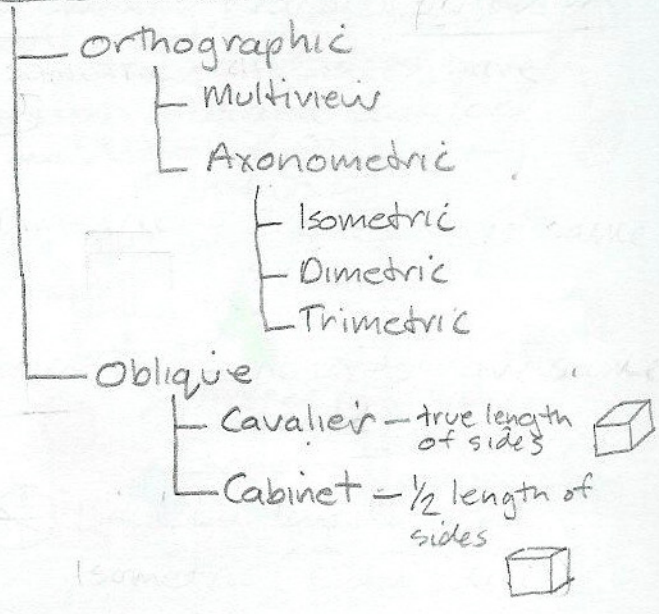


WASTEFUL CODING! SO, REDUCE OBJECT NUMBERS?

ICONS AT TOP

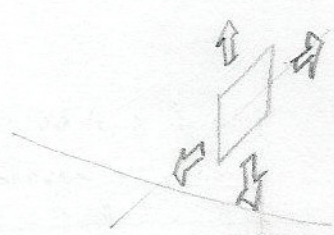
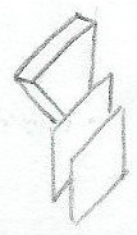


Parallel Projections

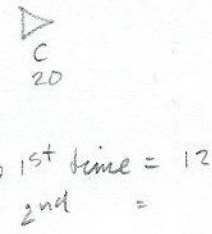
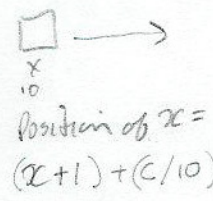


"Trimetric projection is the general case of axonometric and occurs when all three axes are randomly orientated and are each of different scales" (foreshortening 6H)
www.lboro.ac.uk/ac/tracey/rep/riley.htm

The handles could be "solid" - have depth, whereas the pages are planes - transient, changing.



Lock mouse to move YZ
 But how to move X - in/out
 - Shift?
 - Another hot spot?

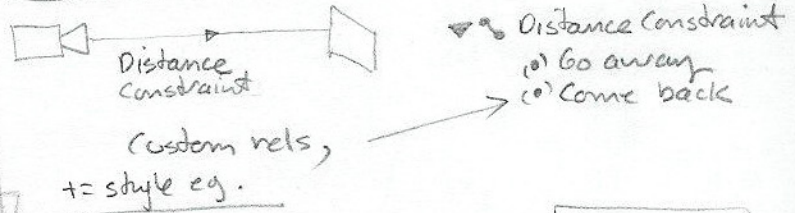


$$box1xyz = (box1xyz/2) + (box2xyz/50)$$

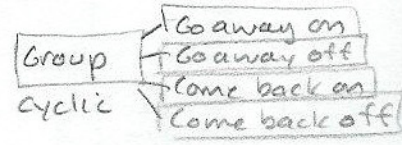
increasingly smaller increasing larger, towards box2xyz

$x + (C * .5)$ 15
 ↑ Doesn't decrease - need to use bet length or similar.
 distance(value1, value2)

ZOOM IN/OUT TO CAM.



Custom vels, + style eg.
 Distance = Distance + 1




Sure - works, But, really requires too much driving from the user.
 Need a "snap to selected" function.

WORKS BETTER than supplied Toggle Param.

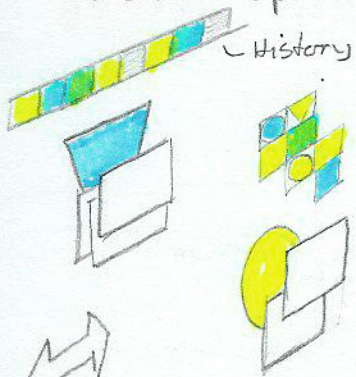
Isometric

KEY ASPECTS

- Cannot use perspective to reduce size of objects
- All objects are the same size:
 - equally selectable
 - does not have complexities of depth perception
- Users will have some experience of isometric
 - diagrams & instructions
 - computer games
 - existing icons 

SO why use isometric over 2D?

- Isometric is 3D, and offers functionality of depth - even if it is diagrammatic.
- Is more indicative of an object, rather than an environment, that requires 3D travel (problematic).



← Reduce to isometric grid for "storage"

← Click, & zoom up to this size

Canvas scrolls in XY isometric. (if need be).

This can all be done in Flash! - which also has stacking order (!), plus target instances, random, all scriptable, in a better interface than Axel.

- Still retains several perceptual concepts of 3D:
- 3D scroll
 - zoom in/out storage
 - visual environment is 3D

FLASH NOTES

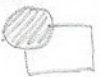
- Consider _level to control loading etc

Goodbye to Axel
Hello to Flash.
Mainly due to scripting control.

VERY Modular! Much easier environment than Axel! Better script - more extensive, better info & tutes available.

```

on (press) {
    startDrag(this);
}
on (release) {
    stopDrag();
    if (eval(this._droptarget) == _root.t1) {
        this._x = _root.t1._x;
        this._y = _root.t1._y;
    }
}
    
```

ON Button 

```

function zoop(me) {
    _root.onEnterFrame = function() {
        me._x = t1._x;
        me._y = t1._y;
    };
}
    
```

↑ frame action with parsable function

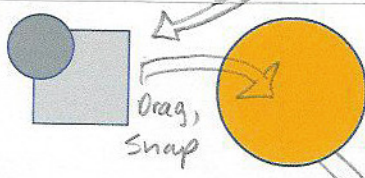
```

on (release) {
    zoop(d1);
}
    
```

```

on (release) {
    delete t1.onEnterFrame;
}
    
```

Constrain function on fott. Now need to attach do dragging object



```

on (press) {
    startDrag(this);
}
on (release) {
    stopDrag();
}
    
```

Draggable
ALL WORKS!

Frame Script

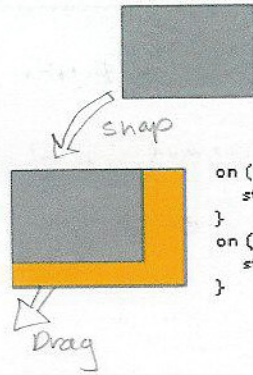
```
function zoop(me) {
  t1.onEnterFrame = function() {
    me._x = t1._x;
    me._y = t1._y;
    lock = true;
    trace("Lock is working");
  };
}
```

Need to do:

1. Sort out what bits of code are attached to objects, and what bits can stay as frame actions.
2. Stop lock-off turning off other mc locks.

Button Script

```
on (press) {
  this.swapDepths(100);
  startDrag(this);
  if (lock=true) {
    delete _root.t1.onEnterFrame;
    trace("unlocked");
  }
}
on (release) {
  stopDrag();
  if (eval(this._droptarget) ==
  _root.t1) {
    this._x = t1._x;
    this._y = t1._y;
    _root.zoop1(_root.p1);
  }
}
```



```
on (press) {
  startDrag(this);
}
on (release) {
  stopDrag();
}
```

← zoop action needs to be on Frame action - if it is on the object, the continuous scri seems to conflict with mouse up/down/drag ext

whoops - the unlock script unlocks both objects.

⤴ Problem with _droptarget - it doesn't seem to be able to cope with two objects ⤵

mousedown - release snap

mouseup - if near snap

↳ if snapped, stay snapped

cannot nest clipElements!

TRY - Dropping onto a fake target, then release to +1

or - Use _hitTest instead. - hit test will use entire shape of object (?)



Why not use hit-test? when select yellow, hitTest it.

true switches are good eg set a variable scooby = true; then test for it if scooby = true etc

```
//P1 Lock function
function p1_lock_t1(me) {
  p1.onEnterFrame = function() {
    me._x = t1._x+5;
    me._y = t1._y+5;
    readout1 = "lock1";
  };
}
//P2 Lock function
function p2_lock_t1(me2) {
  p2.onEnterFrame = function() {
    me2._x = t1._x+10;
    me2._y = t1._y+10;
    readout2 = "lock2";
  };
}
// P1 drag
p1.onPress = function() {
  startDrag(this);
  this.swapDepths(100);
  delete this.onEnterFrame;
  readout1 = "Unlocked";
};
//p1 Release, Snap if over T1
p1.onRelease = function() {
  stopDrag();
  readout1 = "Released";
  if (p1.hitTest(t1)) {
    p1_lock_t1(p1);
  }
}
```

⤴ This works very well
This much code for one object & one target.

Lock function for each possibility. Exponential increase!


For 4 objects & 2 targets that's 16 blocks of code.

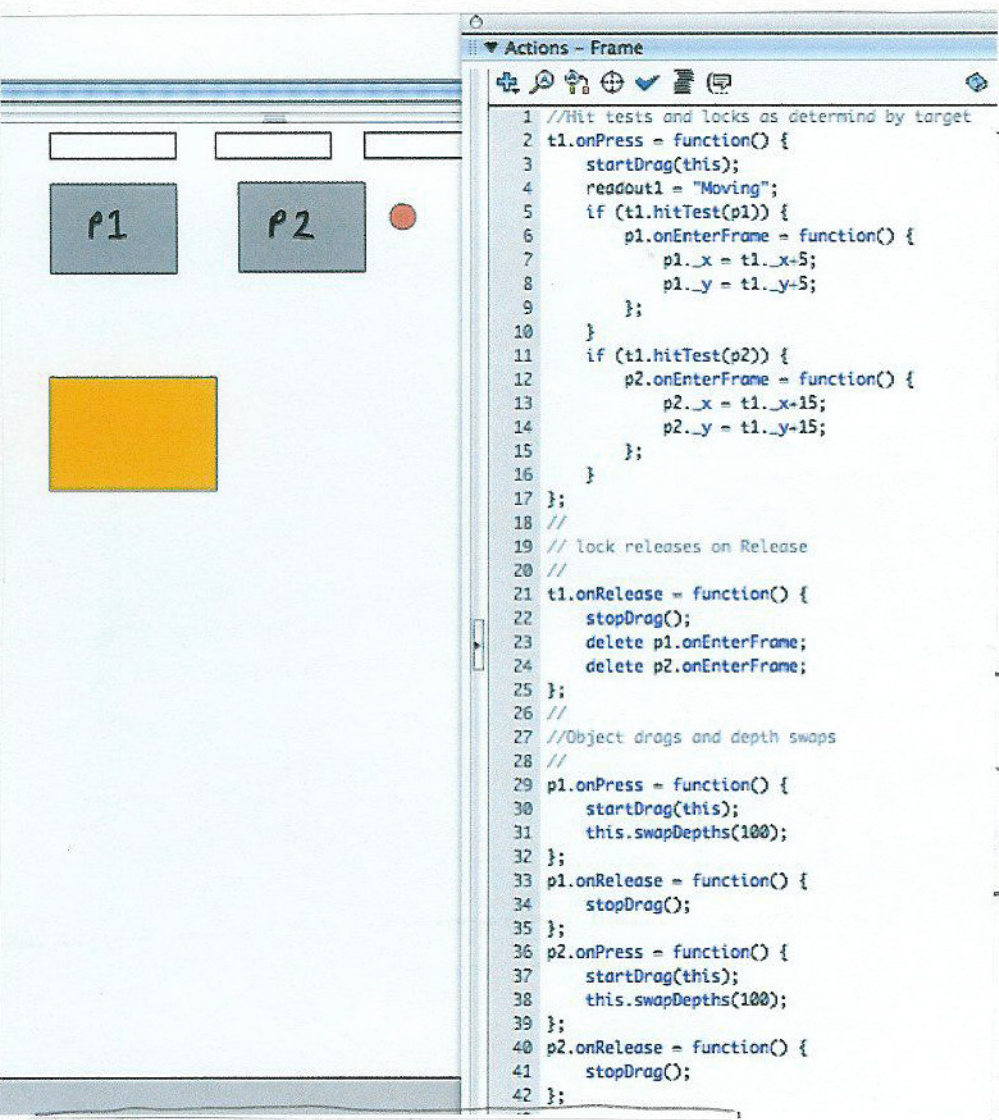


How about driving the lock from the target. IE, whoever is in my zone, is under my control.

Snap function required for each possibility. will get no

Recreate FH mockup in Flash MX 2004

- Decide example sites — Apple, OM Exposure, ED-Media, Nat Bank page.
- Ascertain skew, squash & scale ratios 
- Create variable-based hierarchy
 - Simple dragging
 - Button clicking parenting (at first)
 - Connector lines

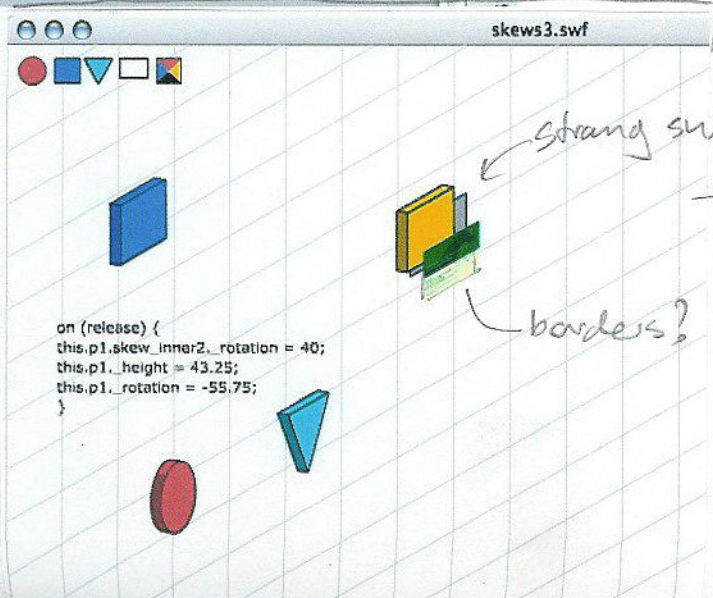


MUCH TIDIER!
This will do!

once only target hit test code, for every object, simple list

Drag & Depth for each object.

• Now make it isometric
 • Add Thumbs
 • Add Connectors



Strang swap depth?

— Flash Skew iso 1.
 Works o.k.

borders?

What sort of zoom?
 — Entire page?
 — Per object?
 — By key?
 — By button?

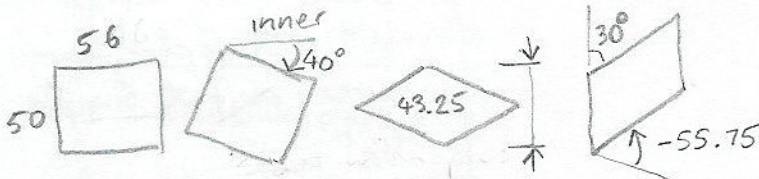
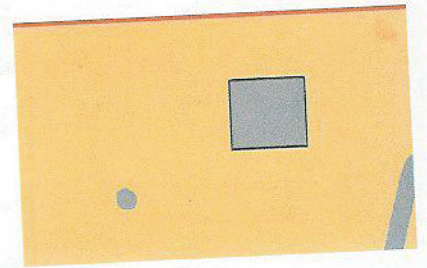
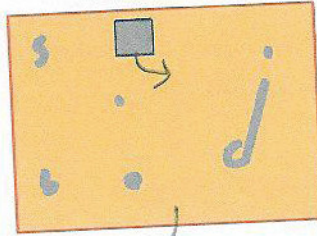
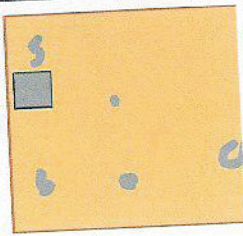
Drag all page



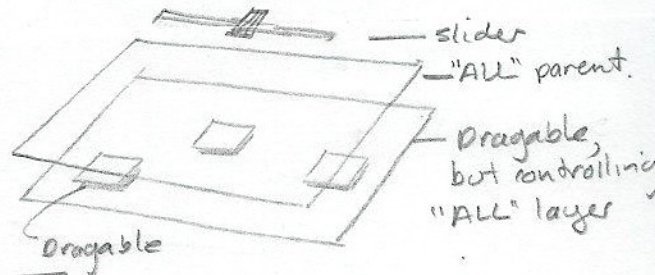
```
on press() {
  drag(all);
}
```

All objects zoom
Main BG can drag
Individuals objects can drag.

NESTED clips works WELL!



224 x 200



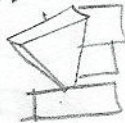
Reverse seq is
rotation = 0
height = 75
inner rotate = 0

Swapdepths problem

SwapDepth (100) - if go to 100, But if another object has 100, will go the absolute bottom, -16384!

If we use common numbers eg 100, to force swap, the pages simply zoom off behind the Target.

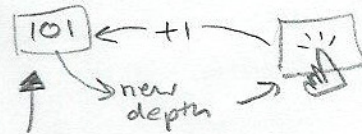
This is NOT caused by the Target, but conflicting depths.



As soon as any 2 pages share the same depth - zoom - off to -16384.

Run an onEnterFrame, if blah = -16384, make eg 50. No, it'll loop as all pages hit 50!

SOLUTION



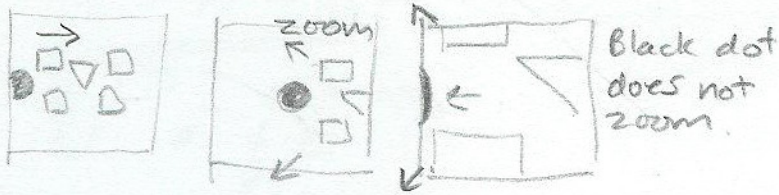
Global number for ALL pages

Each click adds to a number in a dynamic text box / variable. This number is then re-read as the new level.

The Target objects have the same, but with -1000 included!

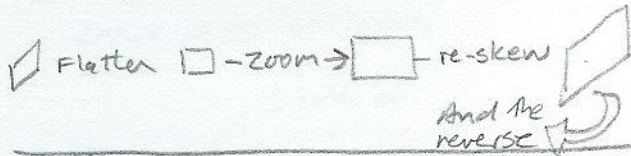
Alive = #798BA0

Zooming has a basic problem



The object zooms, not the view.
Therefore, the view object (item)
will likely move off screen

Thur 16 - GOT ZOOMING TO WORK



Single action partner to onEnterFrame:

This is onLoad \Rightarrow mc.onLoad = function() {

```

_root.onLoad = function() {
  with (_root.all.p1) {
    inner._rotation = 40;
    _height = 43.25;
    _rotation = -55.75;
  }
  with (_root.all.p2) {
    inner._rotation = 40;
    _height = 43.25;
    _rotation = -55.75;
  }
  with (_root.all.p3) {
    inner._rotation = 40;
    _height = 43.25;
    _rotation = -55.75;
  }
  with (_root.all.p4) {
    inner._rotation = 40;
    _height = 43.25;
    _rotation = -55.75;
  }
  with (_root.all.p5) {
    inner._rotation = 40;
    _height = 43.25;
    _rotation = -55.75;
  }
};

```

whatever in here;
}

Put this repetition into
a function
Then called
very
simply

```

:FRAME SCRIPT
_root.onLoad = function() {
  function skewer(skew_me) {
    with (skew_me) {
      inner._rotation = 40;
      _height = 43.25;
      _rotation = -55.75;
    }
  }
  skewer(_root.all.p1);
  skewer(_root.all.p2);
  skewer(_root.all.p3);
  skewer(_root.all.p4);
  skewer(_root.all.p5);
};

```

DECLARE
PARSE

Curves

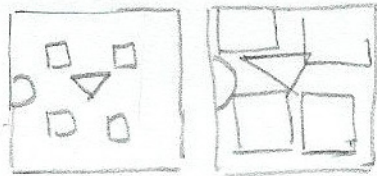
How to
turn on
& off.



- Can easily hide permanently
- Need on/off
- Create in simple scenario first!

Alternative

Simply scale up the objects



* Bitmap images are likely to
not scale smoothly.

TWO OPTIONS:

1_ Use blanks for the scaling
stage - (weird, disruptive)

✓ 2_ zoom up in stages.

eg: slides = 100 = 1 x
slides = 200 = 2 x etc.

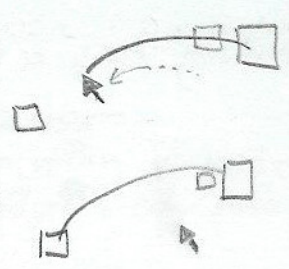
CURVE SCRIPT

```

1 b1.onPress = function() {
2   delete b2.onEnterFrame; — delete any function
3   dragline(); — call any named function (A)
4 };
5 b2.onPress = function() {
6   startDrag(this);
7 };
8 b2.onRollOver = function() { — use RollOver to detect
9   stopDrag(); — second line. (B)
10  trace("Stop Drag Working");
11  delete base.onEnterFrame;
12  joinline();
13 };
14 //
15 //Line drawing function dragged out by b1
16 function dragline() {
17   base.onEnterFrame = function() {
18     _root.createEmptyMovieClip("dragger", -7000);
19     with (dragger) {
20       lineStyle(0, 0x666666, 100);
21       moveTo(_root.base._x, _root.base._y);
22       curveTo((_xmouse+20), (_ymouse-40), _xmouse, _ymouse);
23     }
24   };
25 }
26 //Line drawing function b1 to b3
27 function joinline() {
28   b2.onEnterFrame = function() {
29     _root.createEmptyMovieClip("linejoin1", -7000);
30     with (linejoin1) {
31       lineStyle(6, 0x666666, 100);
32       moveTo(base._x, base._y);
33       curveTo(150, 100, b2._x, b2._y);
34     }
35   };
36 }
37 //Base Drag
38 base.onPress = function() {
39   startDrag(this);
40 };
41 base.onRelease = function() {
42   stopDrag();
43 };

```

Pullout
(A)
Drop
(B)

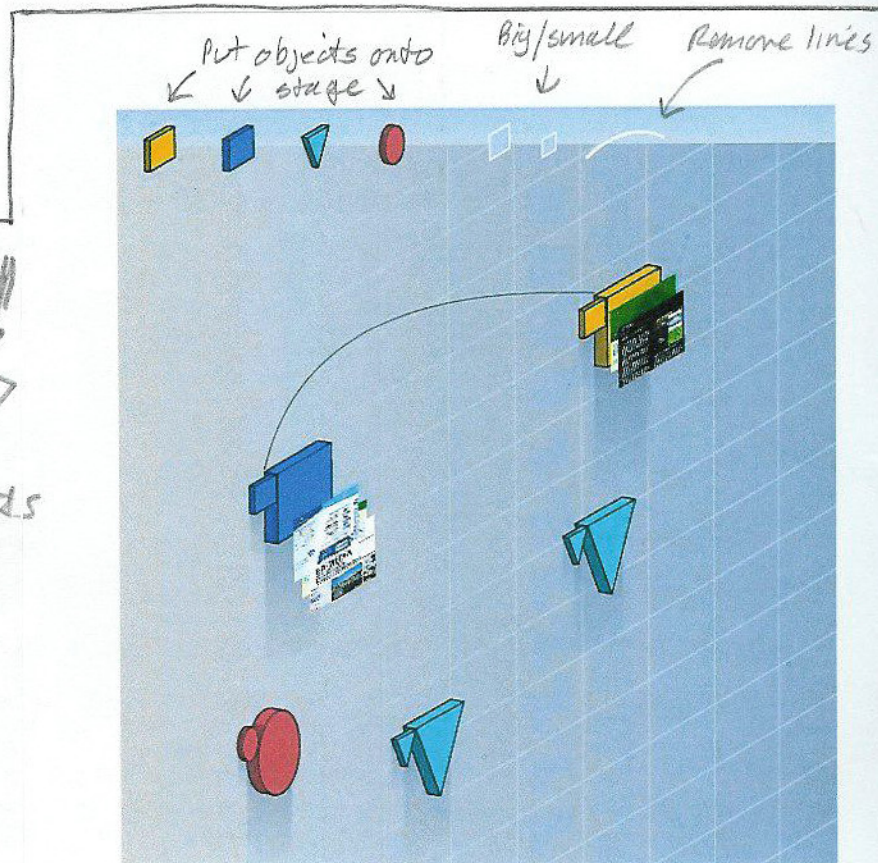


— function "dragline" only runs if called.

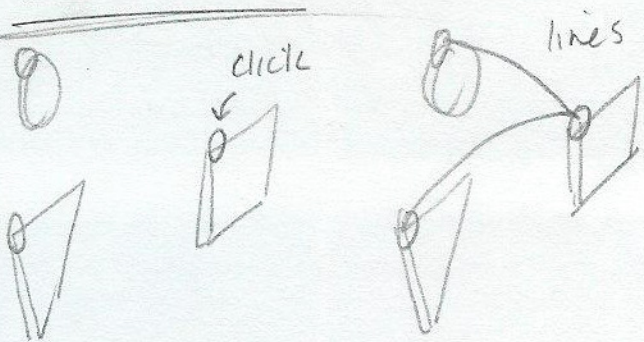
Fully working!

All objects draggable.
line stay connected as objects move.

Need more pages.



IDEA re lines



Have lines already connected - use click to make visible.

Advantages - lines can be pre-connected
- lines can be pre-named.

click on single lines to make invisible.

BRILLIANT!

on rollover readout 2 = 3 (e a number specific to that thumbnail)

on spacebar down
it readout 2 = 3
make big.


The SPACEBAR command is a problem - it is "GLOBAL" - eg, like OnEnterFrame. Even if followed by if statements, it really doesn't behave normally.

BEcause it loops, you can't use if/else, as it continually repeats the loop eg if green make blue, if blue make green, if green make blue etc NOT helpful.

Also harder to script as keystrokes are not attached to movie clips. Most certainly more hassle than they are worth at this point in time.

1  User browses pages.

Will need to recreate ideal sequence of links

A  Then presented with normal history list

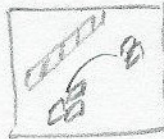
Q1 - Present with questions that require accessing history in a specific order.

Q2 - Asked to re-order pages in accordance to differing criteria

Leg by model, date, colour, price

- ipod
- iphoto
- mini-ipod
- U2 ipod
- ishuttle

B Then, presented with interface and asked same tasks.



How many pages?
(more than prototype 1)

C User's questioned.



TESTING

Qualitative Methods (Tochrim)

- Direct Observation
- Followed by Unstructured Interview

(Jordan)

- Interviews - semi structured.

My method chapter says:

MY NOTES NOW - AUG '05

- Expert Appraisal $\xrightarrow{*}$ OR Direct Observation? Both?
- Followed by interview \rightarrow Two Tier - Fixed response
- Open response.

to next design iteration
if deemed appropriate.

whether to go expert or observation may depend on
* final nature of prototype,
eg, an expert will be easier to brief than a less skilled user.

No Likert scales!

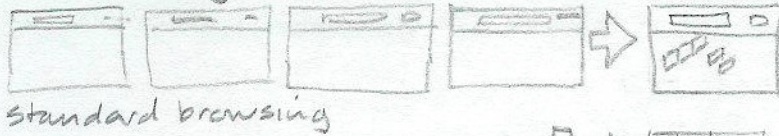
Need to encourage participation at interview - Likert does the opposite.

☆ would be interesting to do both.

How ASSEMBLE?

Stages

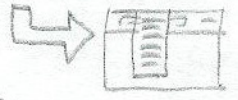
web browsing



standard browsing

* really should get a size-slider working - then 1024 x 768 would work.

← swf inside html - works!
↳ change to 1024 x 768



List browsing - need proper browser?

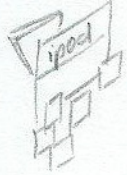
OR could use series of pre-determined pics.

↳ The number of permutations could be huge.

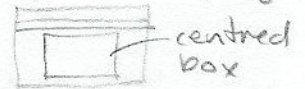
* Individually resize AND all resize, + reset

* How about labels?

NOT rollovers. (require mousing)



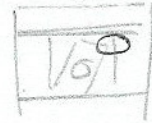
SO ①. Make up HTML page:



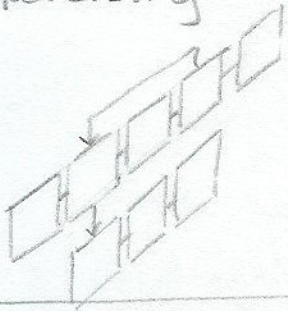
②. Take screenshots of pages



③. Add highlighted button with map link.



Reversing



• Size of page screen cap doesn't really matter, as scroll bars will accommodate.

PAGES

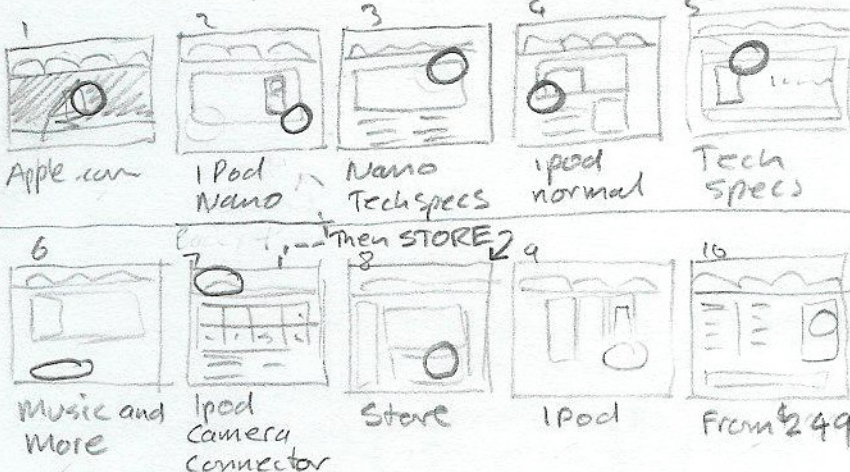
- Apple.com
- iPod tab
- 20 206b iPod pic
- iPod mini icon at top
- Tech specs
- Go back
- Go back

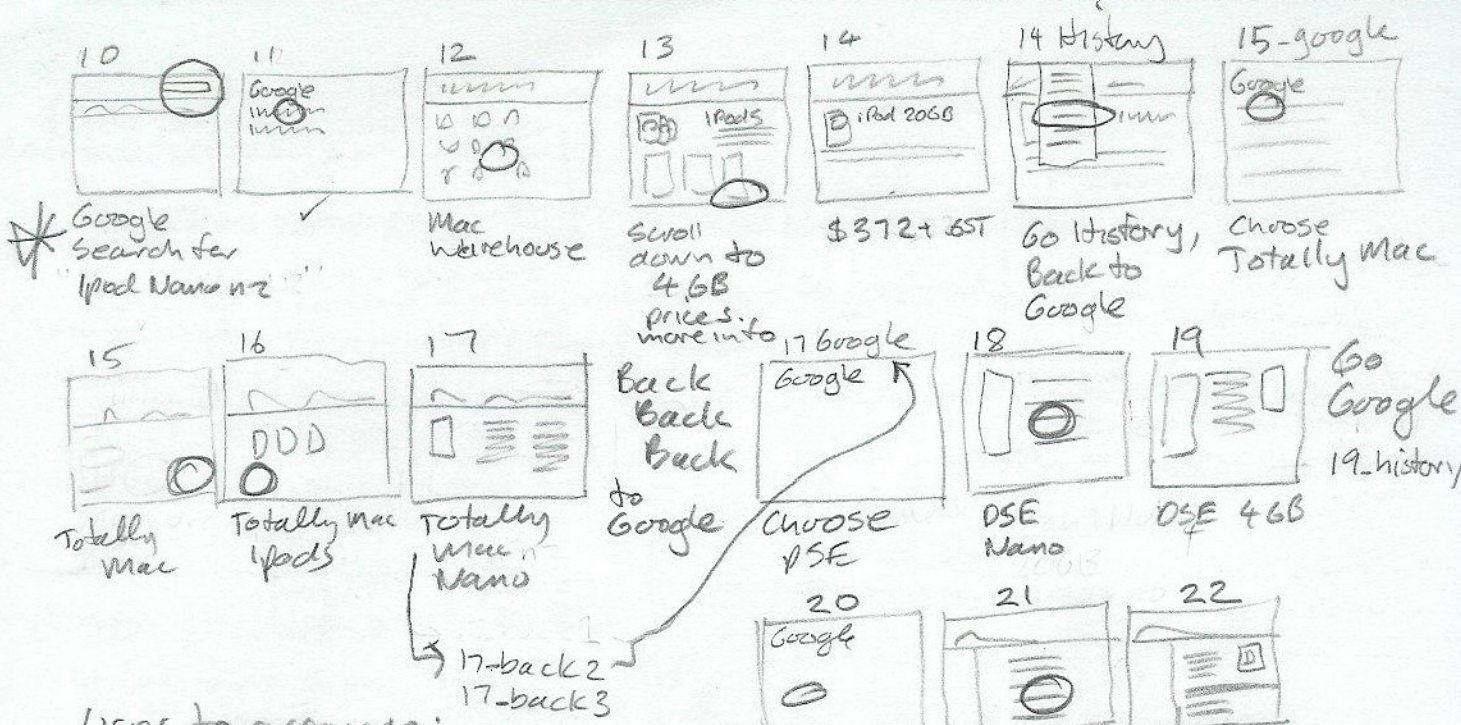
Want to buy a 206b colour iPod

• If user resizes, image stays centred.

• Design for 1024 x 768
∴ suit all situations.

iPod Tech Specs





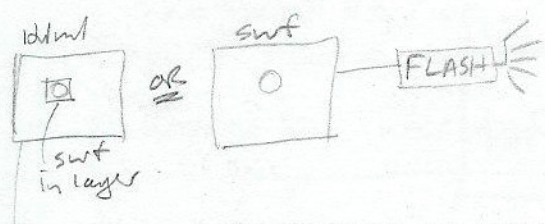
User to arrange:

1. By Price
2. By Product - iPod or nano (?)
3. By Source - Apple
 - Mac Warehouse
 - Magnum Mac
 - Trademe

Then, by using the interface,
 Find — Best Price
 — Tech info
 etc...

• 14 fix
 • remove back delays
 • 17 fix

* Create a faked Google page with
 • Magnum Mac
 • Mac Warehouse
 • DES
 • Trade Me
 all included.

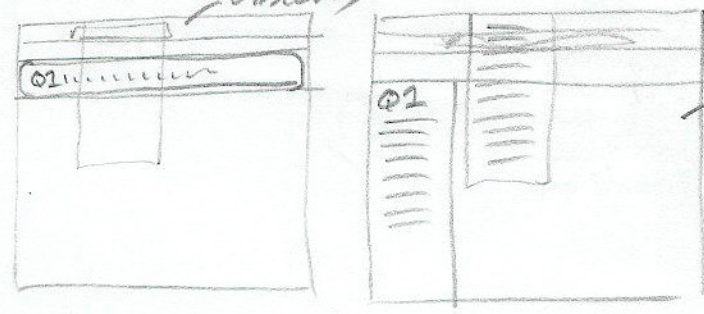


use, "Buy iPod n2"?

Make all on-screen instructions use an appealing skin - eg Ruler - the whole feel needs to be assuring & visually professional!

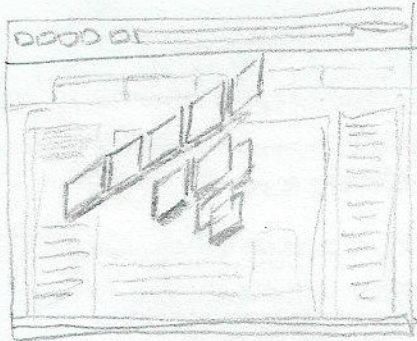
History menu test:
 Used pop-up instructions box - how to keep on top?

Frame? *obscures*



This page changes out.
 - But the history list will replace entire "page".
 } History remembers framesets - which is unhelpful.
 Google example? - Try

IDEA!

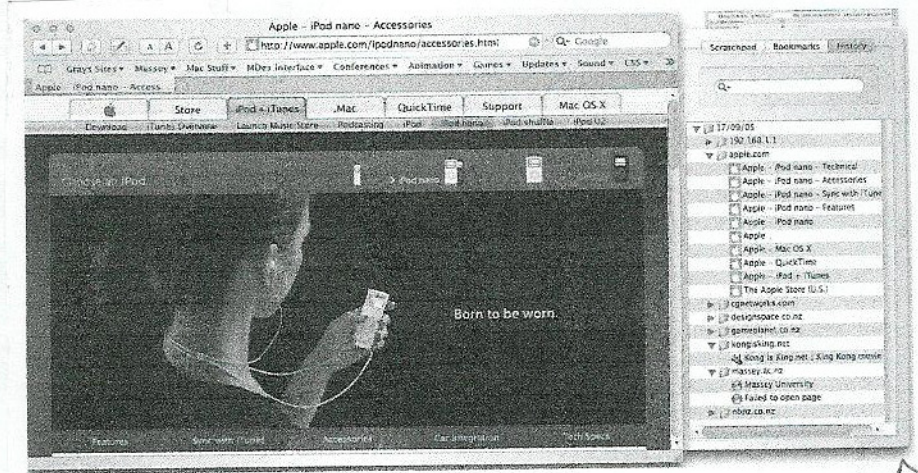
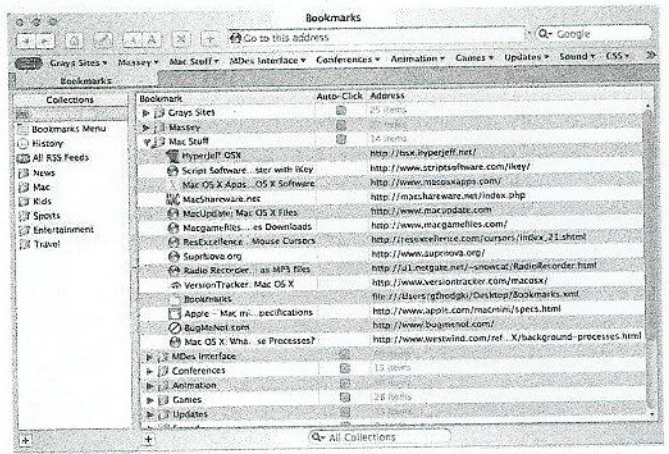


Consider floating interface over background!

Also consider
- OMNIweb icons
- Opera history

History created by test sequence.

Apple's Safari's entire-page bookmarking interrupts browsing continuity



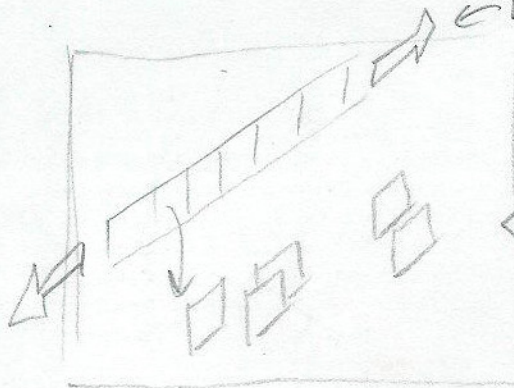
Convergence Utility for Safari's on-the-fly organization

Do I need the user to complete tasks using this list - to provide comparison?
- why? - to achieve what?

- 30 ipod nano nz - Google Search
- 29 TradeMe.co.nz - ipod nano for sale, New Zealand (back)
- \$ 28 BRAND New Apple Ipod Nano 4gb WHITE MP3 Player for sale - TradeMe.co.nz - New Zealand
- 27 TradeMe.co.nz - ipod nano for sale, New Zealand
- 26 ipod nano nz - Google Search (via drop down)
- \$ 25 Apple iPod Nano 4GB White (A2473) - Dick Smith Electronics - New Zealand
- 24 Dick Smith Electronics - New Zealand
- 23 ipod nano nz - Google Search
- 22 TotallyMac.com - NZ's definitive source for Macintosh products! (back)
- 21 TotallyMac.com - NZ's definitive source for Macintosh products! (back)
- \$ 20 TotallyMac.com - iPod nano 4.0GB White
- 19 TotallyMac.com - NZ's definitive source for Macintosh products!
- 18 15 TotallyMac.com - NZ's definitive source for Macintosh products!
- 17 ipod nano nz - Google Search
- 16 Apple Macs NZ : : MacWarehouse : : New Zealand Mac Reseller (back)
- 15 Apple Macs NZ : : MacWarehouse : : New Zealand Mac Reseller (back)
- \$ 14 Apple Macs NZ : : MacWarehouse : : New Zealand Mac Reseller
- 13 Apple Macs NZ : : MacWarehouse : : New Zealand Mac Reseller
- 12 Apple Macs NZ : : MacWarehouse : : New Zealand Mac Reseller
- 11 ipod nano nz - Google Search
- \$ 10 The Apple Store (U.S.)
- 9 The Apple Store (U.S.)
- 8 The Apple Store (U.S.)
- 7 Apple - iPod - Accessories
- 6 Apple - iPod - Features
- 5 Apple - iPod - Technical Specifications
- 4 Apple - iPod
- 3 Apple - iPod nano - Technical Specifications
- 2 Apple - iPod nano
- 1 Apple
- index Welcome

← make this just a history slider.

← This stays static?



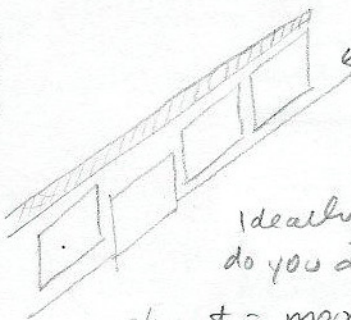
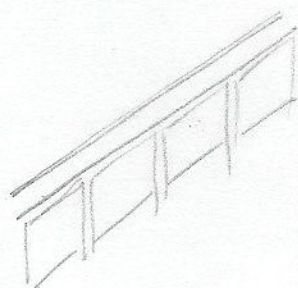
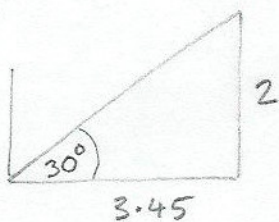
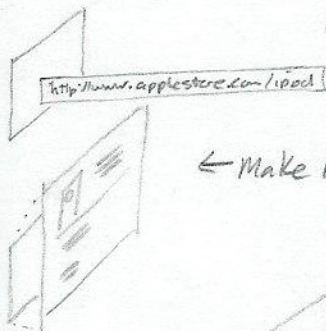
Good idea. Lets this space become a "working" area. Can deal with issue of large numbers later - once key principles have been tested.

Pop up URL's can get very long - how to deal with this? } URL's & page titles can get VERY MEANINGLESS!
Go for pic.

on hover, popup url?

← Make larger? } keeps it visual.

Need a mechanism where individual pages can be kept large - Eg while certain pages are being looked for.

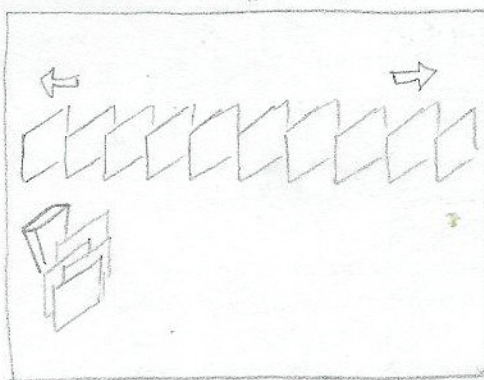
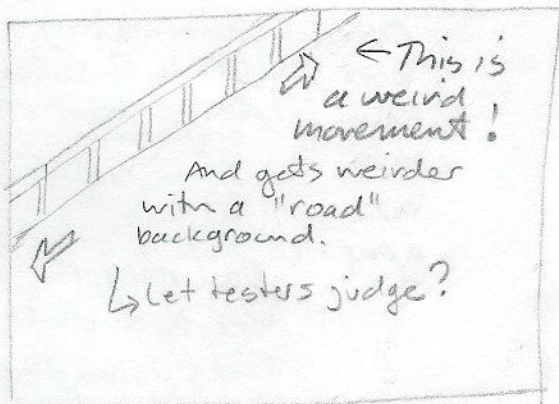


← Use a zone, where pages are still attached until they are pulled off!

Ideally use drag - but how do you drag on a diagonal.

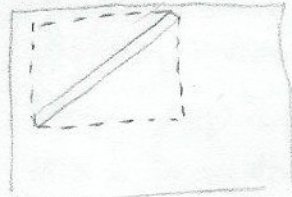
$$\begin{matrix} \text{object} = & \text{mouseX} + 3.45 \\ & \text{mouseY} + 2 \end{matrix}$$

hitTest



Drop the diagonal? No keep 150

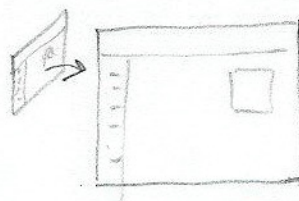
Watch out for hotspots - always squares!



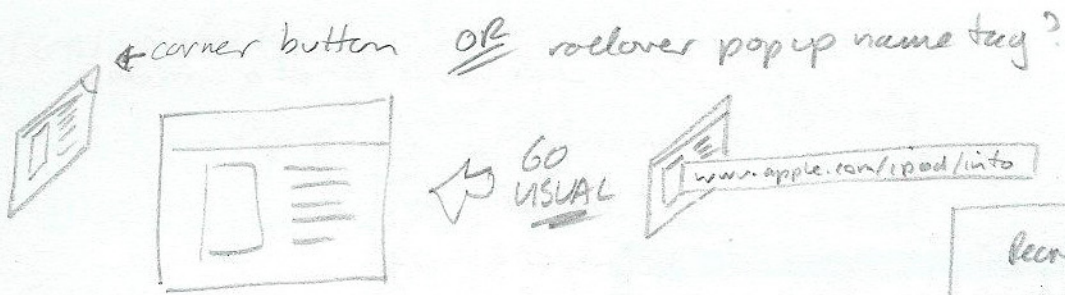
USE
if (root.object.hitTest (this..y, this..x, true)) {
Target object moving object, or current object.

```
function zoop (me) {
  me._width = 100;
}
on (release) {
  zoop (object);
}
```

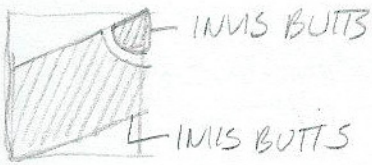
100%	34.5	20
120%	41.4	24
130%	44.85	26



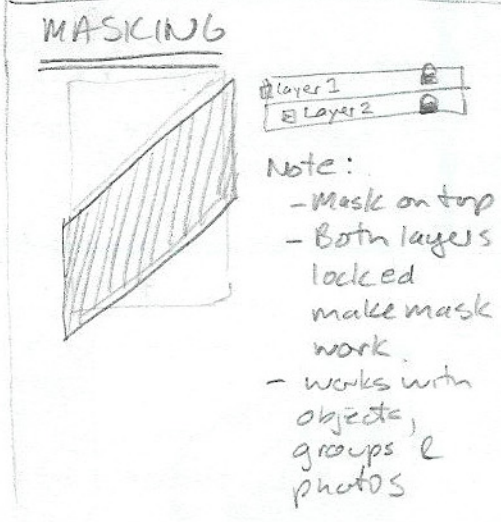
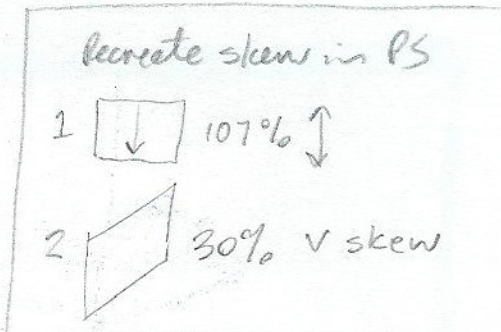
Small icons should have a zoom preview - ideally using simple keystroke, ie spacebar. - Peter some sort of mouse "hot-spot".



WOULD IT HELP TO PRE ANGLE THE icons?



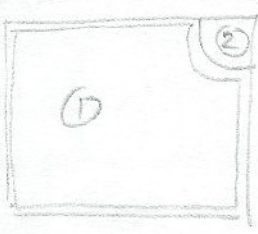
Then remove all that skewing code!



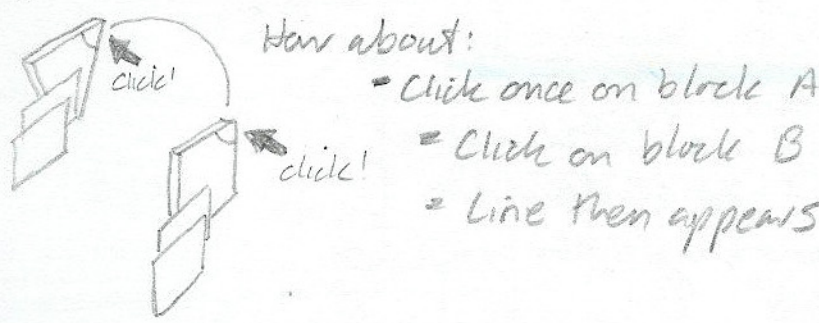
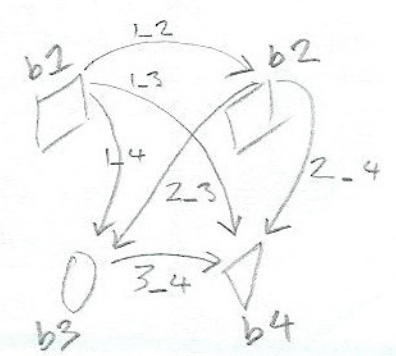
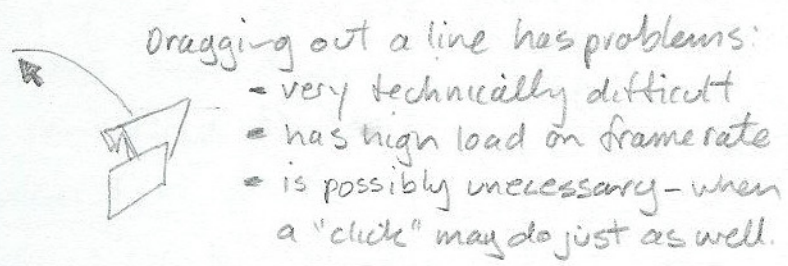
Re testing - IF the page browse sequence is too slow, provide "Instant history" button

Eg Go to end - all pages browsed.

NOTE:



IF we have a MC with two mc's/butts inside, DO NOT target the overall mc or the inside ones WILL NOT WORK!



- Connections: one
- 1-2
 - 1-3
 - 1-4
 - 2-3
 - 2-4
 - 3-4

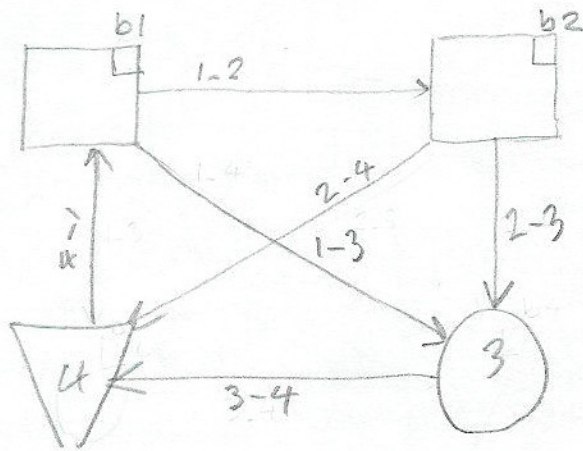
Code: on release T1.line = 1
on release T2.line = 1

Tidy!

Then a bunch of functions

```

OnEnterFrame = function () {
  if T1.line = 1 and T2.line = 1
    T1T2line.visible = 1
};
  
```



Each click needs to set a variable.

on click

b1 readout1 = b1

b2 readout2 = b2

if readout1 = b1 ++ readout2 = b2
line draw 1-2.

Can have one function with all possibilities

use numerical 1, 2 etc
or expression "b1"

Delete?

use double click

- click once to set var

- if var is "this"

- delete.

Use a var

on click if var = 1
make 0
else 1 } for each tag

Then:

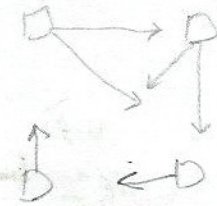
IF var1 = 1 && var2 = 1
then show line 1

IF / else's to show lines

IF var2 = 1 && var3 = 1
then show line 2



better



Line no.

1-2	1
1-3	2
2-3	3
2-4	4
3-4	5
4-1	6

Notes from MW AM - 16:06:06



- Focus on Lessitzky "SPACE" - ~~AAAAAA~~
- Abstract shape thing can go. | Move from linear space to "constructed" space. constructed Relates to constructivism education
- Allow naming groups
- Action Research | names from websites - select one or custom?
- Include icons - eg ipod
- Q's on concept - drag/drop/group/move
- Thumbails line update?



ON

ON

OF

OF



ON - line

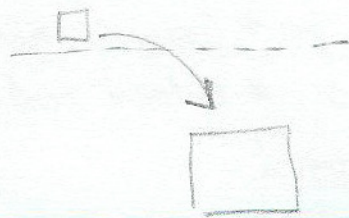
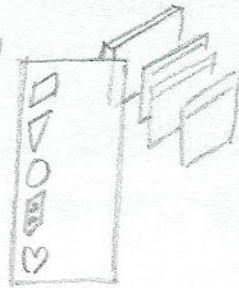
OFF - X

OFF - X

ON - X

Icon selection

Pop-up?



if mc is below Y,
scale = ...

← how does the block appear, and "why"?

KEY STROKE LISTENING

```
var myListener = new Object();
myListener.onKeyDown = myOnKeyDown;
Key.addListener(myListener);
```

```
function myOnKeyDown() {
  if (Key.isDown(Key.CONTROL)) {
    pop_up_panel._width = 200;
  }
}
```

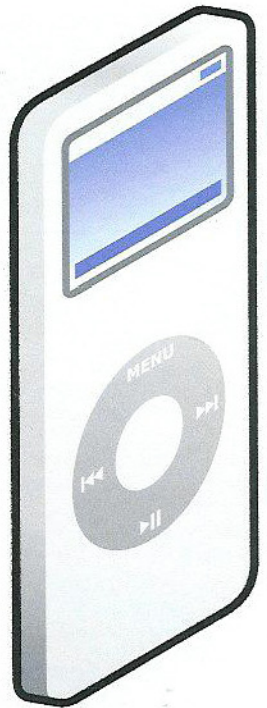
BLOCKS - Drag off toolbar or pop-up toolbar?

- Go for drag-off as this continues the drag-n-drop approach. Also shapes are visible to select from.
- A pop-up introduces a new "mode", and is invisible and unknown unless informed. Not ideal!

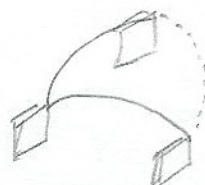
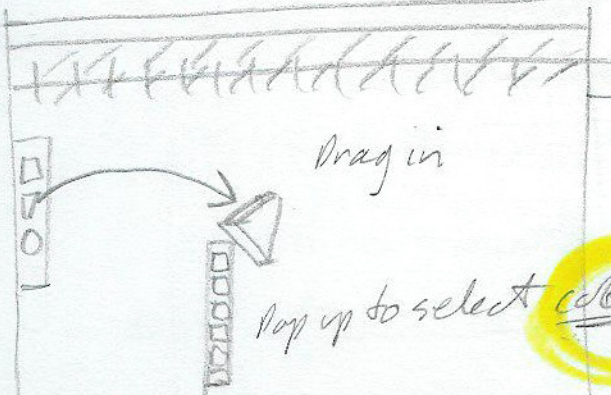
USE ICONS?

(Drawn in Freehand) Using literal icons creates problems -

- where do they come from - a huge database somewhere?



- the more literal you get, the harder it is to find "just" the right icon.
- This replicates current issues with literal icons, and achieves little that is new.
- One of my main issues is the generic usefulness of abstract objects - **STICK WITH SHAPES!**

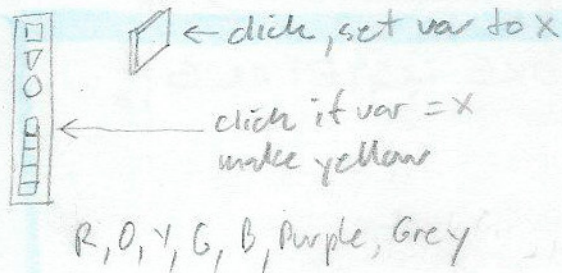


← How do control this 3rd line?



- So • Generic geometric shapes
- Colour coded

How select colour?



TWO METHODS

• Change Object - requires making up more objects

• Change colour - requires rebuilding objects



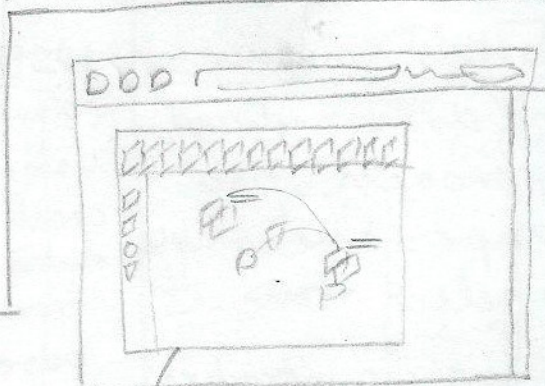
- and using RGB values

* But once setup, endless colour range

```

/* Swaping MovieClips
Use, my_mc.attachMovie(idName, newName, depth [, initObject])
EG
on (release) {
    thing.attachMovie( "circle", "circle1", 2 );
}

Use MovieClip.removeMovieClip() to remove
*/
_root.icon_change_butt.onPress = function() {
    tagbar1.width = 200;
    _root.b2.attachMovie("ipod_icon", "ipod_icon", 2);
    _root.b2.blue_box_gpx._alpha=0;
};
  
```

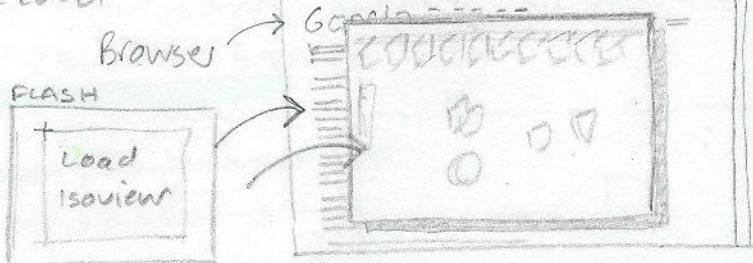


Floating overlay could be semi-transparent

MW AM July 7

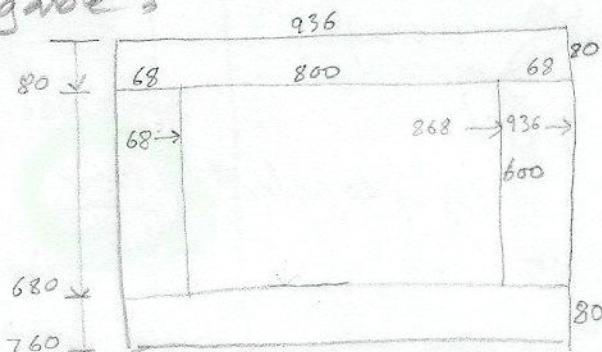
- Add text labels to "groups"
- ↳ can pull from web page?
- Isoview can open in-page is OK
- Video can dest - can record initial reactions.

THIS DIDN'T WORK!!
Too many actions failed, setups, rollovers etc - go back to adding a web page into the background to "fake" a float-over panel



Isoview is loadmovieclip into SWF
Maybe transparent.

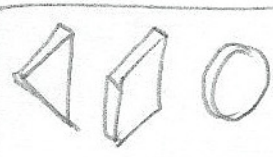
* Draggable?



Need a "double click" go to URL.
 Keys - eg Ctrl, Space, do not work inside the browser - only as lone SWF!
 We already have Press & Release on the P's - so need to watch conflicts.

onPress // First click
 ↳ set timer
 // second click
 ↳ if timer = (timer + 1sec)
 ↳ Go to
 Else
 Reset / delete

on Press ↳ start Drag Function
 ↳ timer function
 on Release ↳ stop Drag
 ↳ IF timer within range
 ↳ go to URL

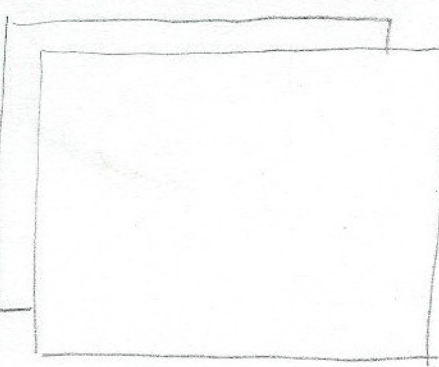
Edit & move up P8, P13, P15, P16
 Fix - 9
 "Group Identifiers"


VERY CLEVER double click script - totally original - works well!

```

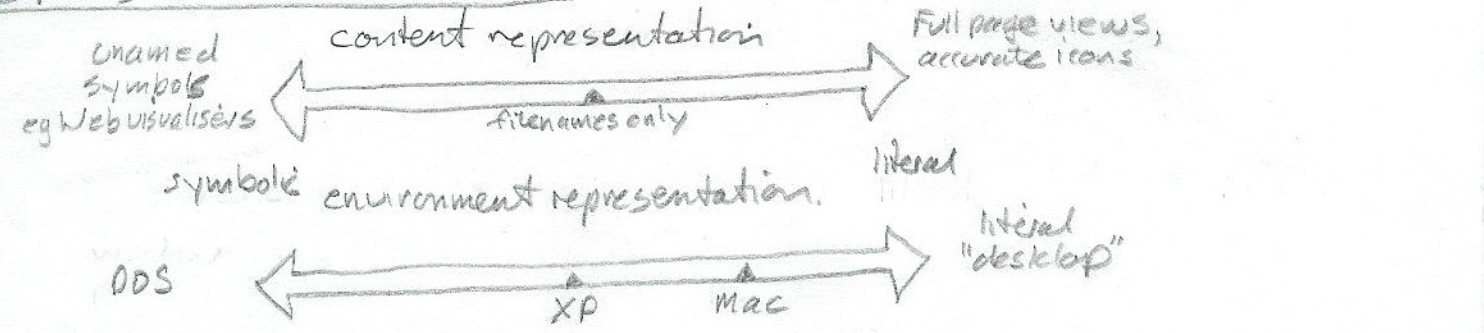
_root.pl.zone.onPress = function() {
  bar.width += 50;
  if (bar.width >= 100) {
    getUrl("pl.html", "_self");
  }
  bar.onEnterFrame = function() {
    bar.width -= 1;
  };
};
  
```

→ Each click add 50 pixels to bar length
 → And if bar gets to 100 (two clicks)...
 → go to URL
 → however, be quick, because the bar will soon shrink back to original size
 (add delete this)



IF new windows opens _self, then when returning to isoview, It does not retain state!
 This means we have to open: a new window
 a new tab
 New tab is not controllable by htm/flash!
 JUST HAVE TO LIVE WITH THAT!

"GRAS SYMBOLIC SCALE"



A study of user-behaviour when confronted with an interface that conveys functionality, has an integrated visual style, but also uses non-specific visual forms.

- reaction (based on experience) in response to visual statement
- ability to recognise and use symbolic functionality
- ability to apply meaning to non-specific elements