



# INTRODUCTION TO DIGITAL IMAGING – PAPER TO PIXELS

Dr. Irene Fubara-Manuel



## INTRODUCTIONS

- What are our names, pronouns and interests?
- What production tools are you familiar with?
- What would you like to gain from this course?



## COURSE OVERVIEW

- Reviewing the module guide on Moodle and GitHub
- Assessment and Feedback Deadlines
- Coursework and Documentation





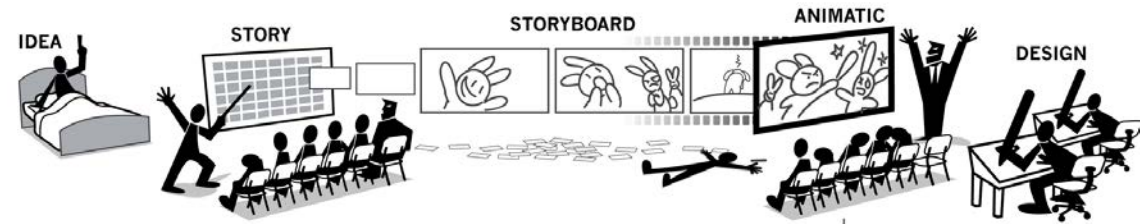
# WHAT IS MEDIA PRODUCTION?

## STAGES OF PRODUCTION

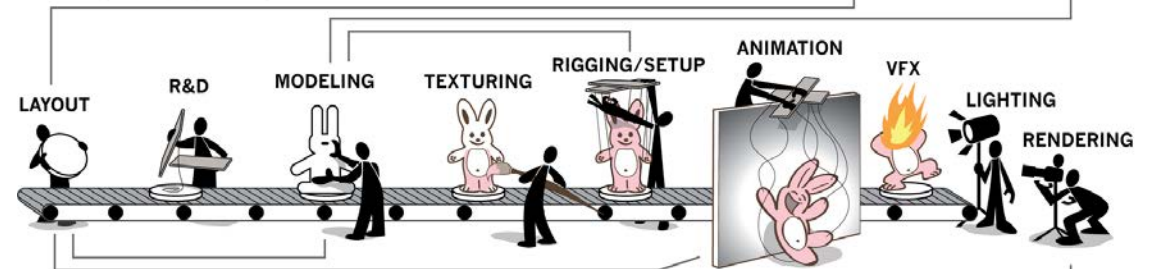
Illustration of  
production stages for  
3D animation

# 3D Production Pipeline

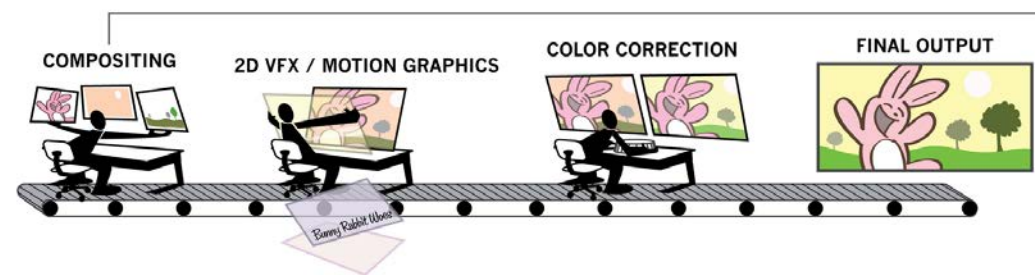
## PRE-PRODUCTION



## PRODUCTION



## POST-PRODUCTION







WHAT IS DIGITAL MEDIA?

*LANGUAGE OF  
NEW MEDIA*

**Manovich, Lev (2001)**





## ***Principles of New Media / Digital Media***

1. Numerical representation
2. Modularity
3. Automation
4. Variability
5. Cultural Transcoding







## NUMERICAL REPRESENTATION OR *DIGITIZATION*

Digitization consists of two processes:

- *Sampling* continuous data at regular intervals.  
Eg. converting a physical painting to pixel grids.
  - *Resolution* – Frequency of sampling
- *Quantization* assigning numerical value.  
Eg. the assigning of the values of 0-255 for an 8-bit greyscale image.



## MODULARITY

Media elements consist of discrete samples  
Eg. Pixels, polygons, vectors, ascii characters...  
etc.





## AUTOMATION

Many operations in digital media can be automated.

Eg. The photo app on most phones can automate the best colour adjustment for images



## VARIABILITY

As a consequence of numerical coding and their modularity, digital objects can exist in multiple forms—they are not fixed.

Eg. One sound file can be copied to numerous locations on servers and in different file formats and compression levels.

The idea of originality as in analog media (eg. limited edition vinyl presses) is subverted.





## TRANSCODING

The translation of information from one format to another.

As a media theorist and practitioner, Manovich highlights that this translation takes a cultural and computational form.



## COMPUTATIONAL TRANSCODING

- *Lossy* compression transcodes media to smaller files that are easily transferred but lower in quality. In sound, an .mp3 or .ogg file would be a lossy compression format; In digital imaging: .jpeg and .png files. In filmmaking: .mp4 files.
- *Lossless* compressions are higher quality files that are larger in bytes. In sound: .wav | In digital imaging: .tiff camera raw .crw, .raw, or .exr | In filmmaking: QuickTime .mov or REDCODE .r3d files.



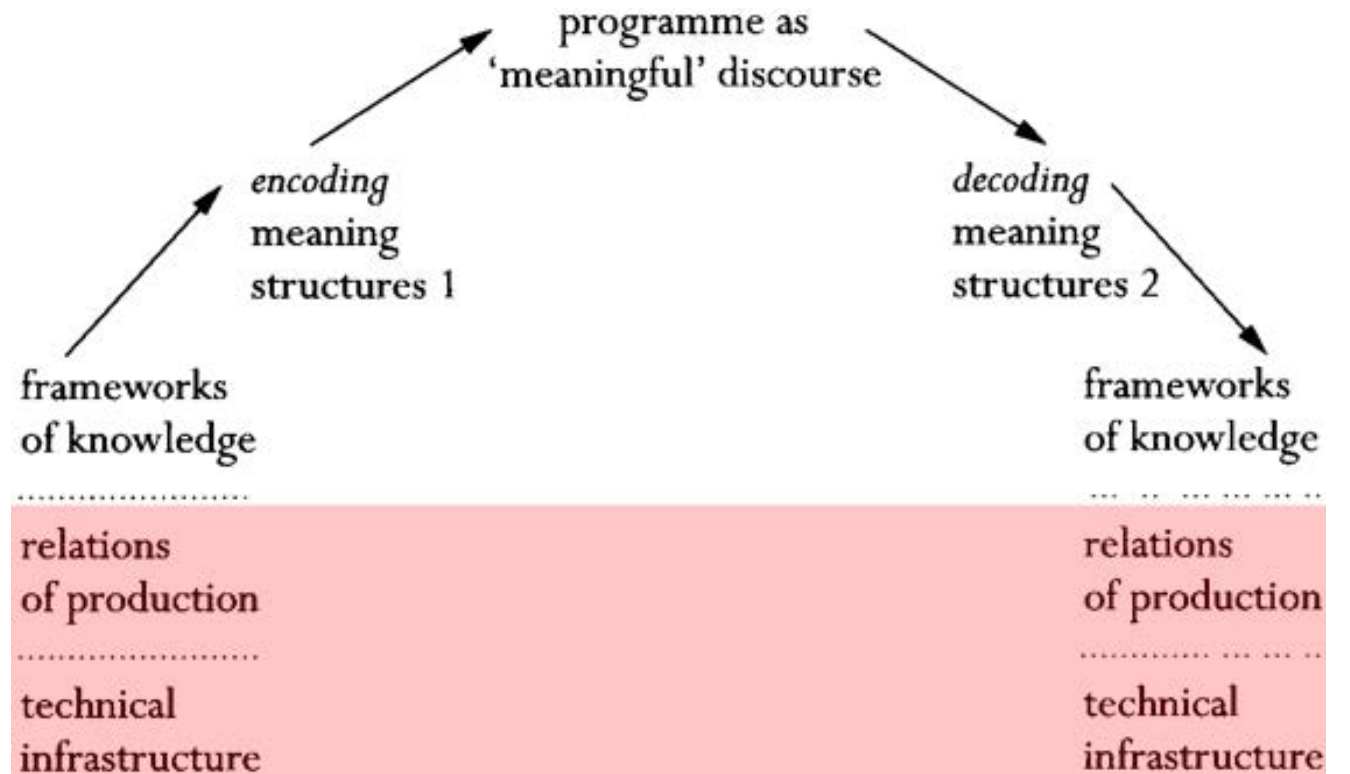


## CULTURAL TRANSCODING

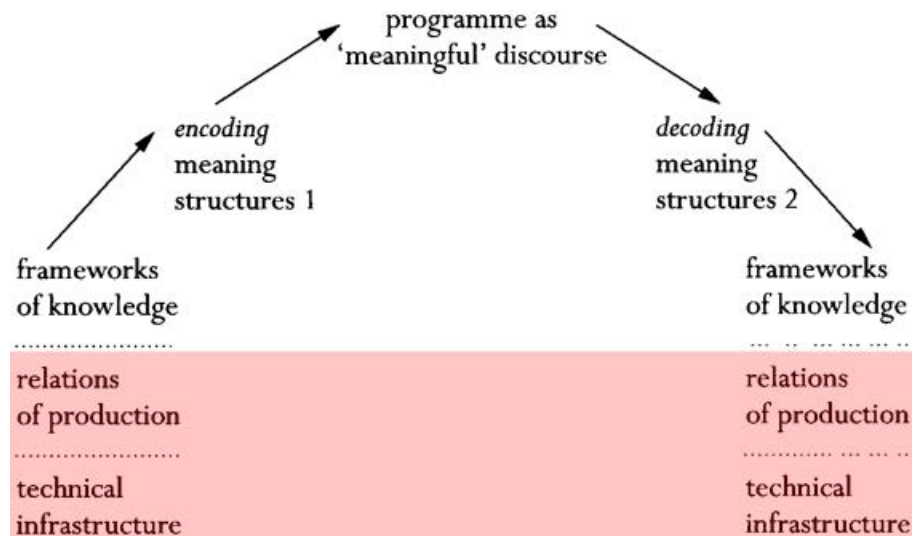
Digital objects **are** media objects.  
They have cultural meaning.

STUART HALL'S  
ENCODING/DECODING  
MODEL OF  
COMMUNICATION

Hall's Model of  
Communication

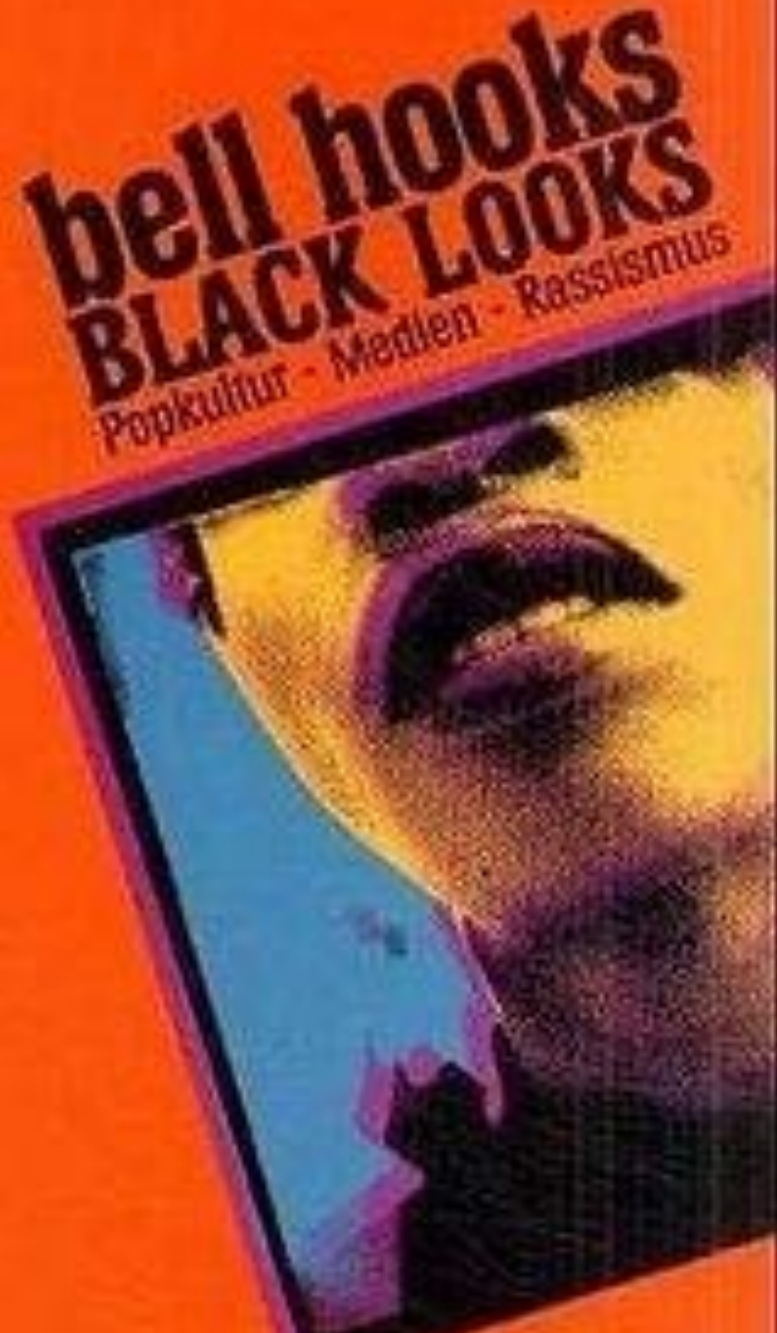






# MEANING

- Dominant/Preferred meaning
- Negotiated
- Oppositional



## BELL HOOKS THE OPPOSITIONAL GAZE

There is power in looking (115)

[...] all attempts to repress our/black peoples' right to gaze had produced in us an overwhelming longing to look, a rebellious desire, an oppositional gaze (p.116)



# DIGITAL PRODUCTION

Producing media/meaning through  
computational practices



# WORKSHOP

**Introducing Adobe Photoshop** – The Interface



Jason Okutake



Lauretta Dolch



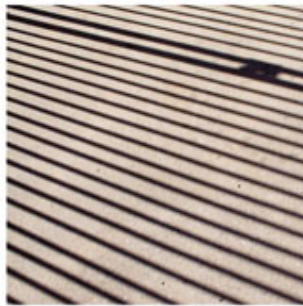
Summer Underwood



Brian McDonough



Alex Ebright



Justin Lloyd



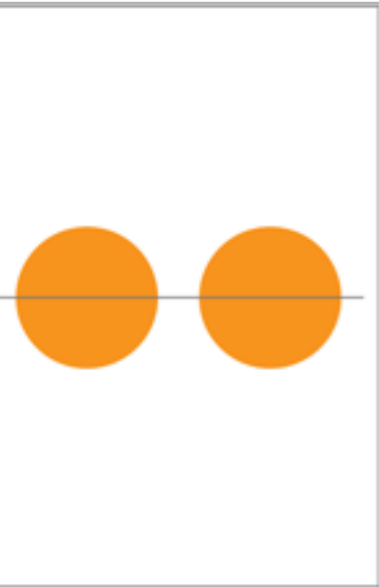
Jason Okutake

# DESIGN PROBLEM I - PHOTOGRAPHS

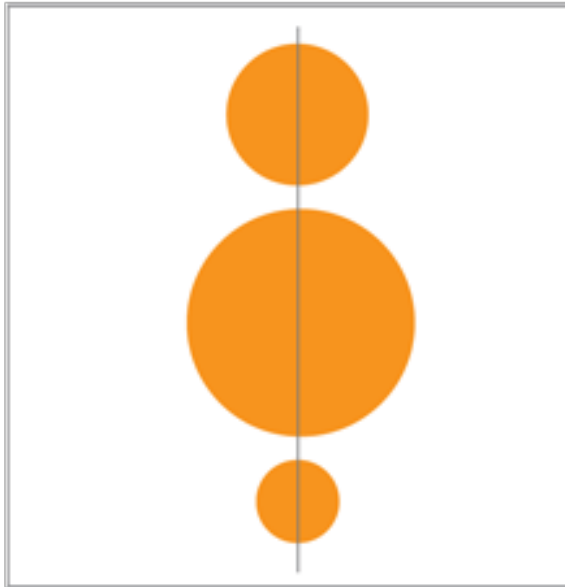
Point, Line, Plane

1. Explore the environment with a camera, looking for surprising and intriguing visual examples.
2. Choose your best examples, and crop them to a square using PhotoShop
3. Try to create some meaning with the placement of your images on a grid





Elements mirror from side to side along a common axis.  
from top to bottom, left to right, or both.



Elements are placed organically, relying on the interaction  
of positive and negative space to yield tension and balance.



## DESIGN PROBLEM II - SHAPES

Shape Layers—Symmetry and Asymmetry

1. Working in 1200x1200px square, arrange three or four geometric elements (circles, squares, rectangles, triangles, etc) in a symmetrical way. Start with variations in which all the elements are the same size, then create symmetrical designs with elements of different size. Experiment with scale and cropping.
2. Create asymmetrical designs using forms of different sizes. Experiment until you find visual balance in each composition. For example, use several small elements to offset one larger one.
3. Many variations are possible. Introduce contrasts of color or value. Create a simple animation of one or more designs; make a stable design become active, or bring order to a seemingly random arrangement.

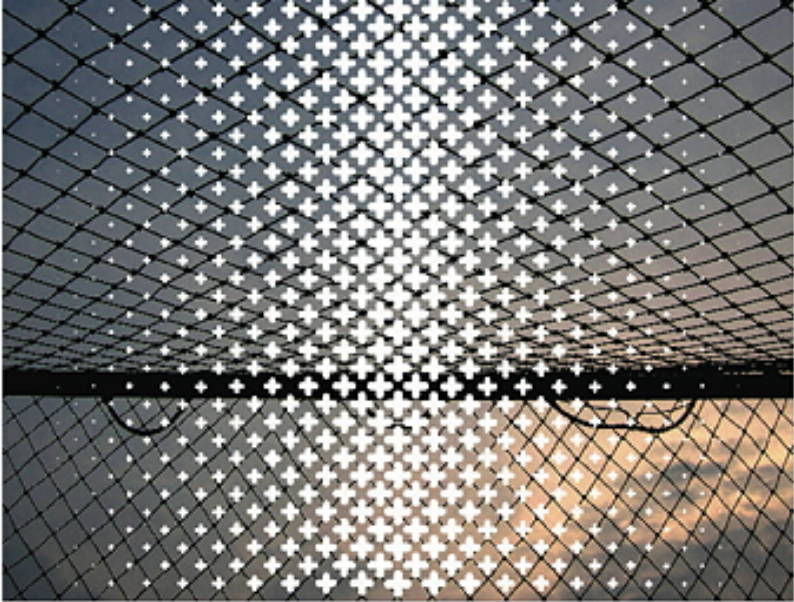


# DESIGN PROBLEM III - TYPOGRAPHY

Contrast and Composing



1. Select a contrasting pair of letterforms. Choose letters that vary in their weight, geometry, and complexity.
2. Working within a 2400 x 2400px square, combine the letterforms in dynamics compositions. Home in on letterform details to illuminate the unique anatomical and stylistic features of each. Use figure/ground relationships to contrast forms against each other as well as merge them together. Crop, combine, repeat, rotate, enlarge, and reduce the letterforms to create both separation and ambiguity.
3. Choose three or more final designs that celebrate formal differences as well as distribute positive and negative space into fluid, balanced compositions.



Jeremy Botts



Jason Okutake

# DESIGN PROBLEM IV - GRAPHIC TRANSPARENCY

Graphic Transparency

1. Create a field of opaque graphic elements consisting of icons, textures, or typography.
2. Layer the graphic elements over an image. Create an interplay between the two layers using layer masks and blend modes.



## TASK I

Using the methods we learned in class, create a Tabloid sized poster with 300dpi that represents the concept of digital production as we have discussed in the introduction.