

Interaction Design
Thomas Owens



Principals of Animation

SESSION TYPE : LESSON with WORKSHOP
WBD4400

Principles of Animation 1

Timing And Spacing
Easing

Anticipation Follow-
through and Overlapping

Squash and Stretch

Inspection-Based Evaluation #1

Heuristic Evaluation - Advantages
and Disadvantages

Afternoon Workshop

Principals of Animation

12 Principles of Animation

- 1.Squash and Stretch
- 2.Anticipation
- 3.Staging
- 4.Straight Ahead Action and Pose to Pose
- 5.Follow Through and Overlapping Action
- 6.Slow In and Slow Out
- 7.Arcs
- 8.Secondary Action
- 9.Timing
- 10.Exaggeration
- 11.Solid Drawing
- 12.Appeal

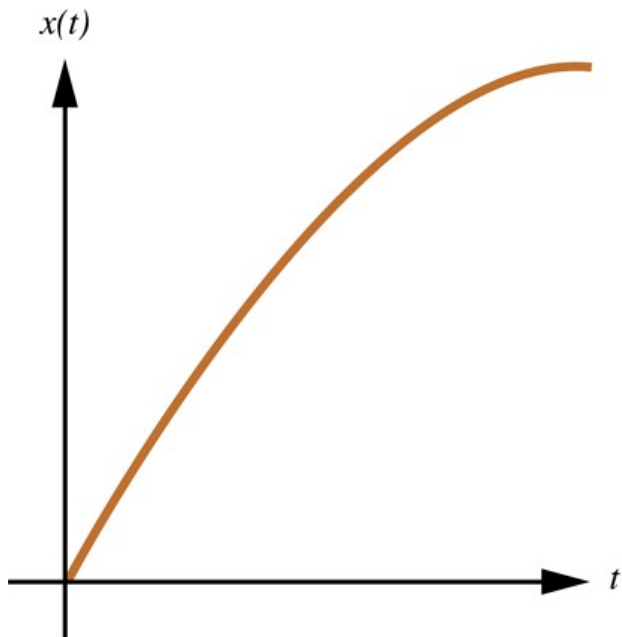


Timing and Spacing Easing

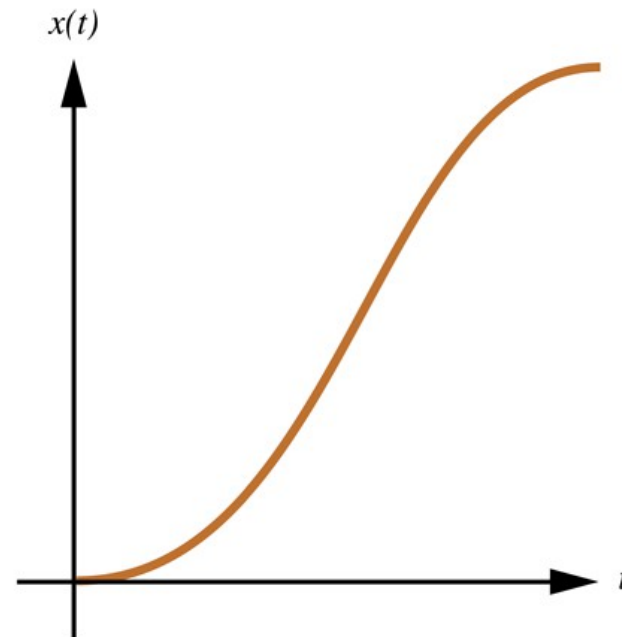
The animation-timing-function specifies the speed curve of an animation.

The speed curve defines the TIME an animation uses to change from one set of CSS styles to another.

The speed curve is used to make the changes smoothly.



`kCAMediaTimingFunctionEaseOut`



`kCAMediaTimingFunctionEaseInEaseOut`

Anticipation, Follow-through and Overlapping

Anticipation is often the most important part of any animation. It's also the part that typically lasts the longest. The greater the action, the longer and more exaggerated the anticipation should be.

Follow through is similar to anticipation, except it occurs after the action instead of before it. Things don't stop suddenly in the real world any more than they start suddenly.

When throwing a ball, your arm continues its motion after releasing the ball. When a ball bounces on the ground, it doesn't stop. It continues bouncing until eventually coming to rest. Both are examples of follow through.

Overlapping action is similar. An example is your arms swinging as you run. The running is the major action and your swinging arms overlap it. The overlapping action should usually move at different speeds than main action.

Squash and Stretch

Three-dimensional (3D) objects have mass and volume, and they exhibit a certain amount of rigidity when moving. Real objects deform slightly during movement, revealing how rigid they are.

Organic objects aren't completely rigid. They're usually softer and more malleable. When the movement of organic objects is stiff and rigid, it doesn't feel right. Man-made objects, on the other hand, tend to be stiff and rigid.

The principle of squash and stretch is about showing objects flattening and elongating as they move to reveal their rigidity. The object should appear to retain its mass and volume, but it should also deform to appear more natural.

Squash and Stretch

For example, a bouncing ball will squash when it comes in contact with the ground, and then it will stretch after the bounce, elongating in the direction of movement

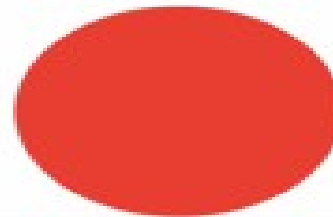
The ball is not deformed before bouncing.



The ball squashes when bouncing against the bottom of the stage.



After bouncing the ball unsquashes.



And stretches in the direction of the motion.



Inspection Based Evaluation

Usability inspection is the name for a set of methods where an evaluator inspects a user interface.

Usability inspections can generally be used early in the development process by evaluating prototypes or specifications for the system that **can't** be tested on users.

This is in contrast to Usability Testing where the interface is evaluated by testing it on **real users**.

Usability **inspection** methods include:

- Cognitive walkthrough (task-specific, what is recognised)
- Heuristic evaluation (holistic, paying attention to design principals)
- Pluralistic walkthrough (multiple evaluators.)

Methodology: Heuristic Evaluation

A heuristic evaluation is a usability inspection method for computer software that helps to identify usability problems in the UI design.

It specifically involves examining the interface and judging its compliance with recognized heuristics.

These evaluation methods are now widely taught and practised in the new media sector, where UIs are often designed in a short space of time on a budget...

- en.wikipedia.org/wiki/Heuristic_evaluation











Advantages and Disadvantages of Heuristics

A heuristic evaluation should not replace usability testing. Although the heuristics relate to criteria that affect your site's usability, the issues identified in a heuristic evaluation are different than those found in a usability test.

Advantages	Disadvantages
<ul style="list-style-type: none">• It can provide some quick and relatively inexpensive feedback to designers.• You can obtain feedback early in the design process.• Assigning the correct heuristic can help suggest the best corrective measures to designers.• You can use it together with other usability testing methodologies.• You can conduct usability testing to further examine potential issues.	<ul style="list-style-type: none">• It requires knowledge and experience to apply the heuristics effectively.• Trained usability experts are sometimes hard to find and can be expensive.• You should use multiple experts and aggregate their results.• The evaluation may identify more minor issues and fewer major issues.








Jakob Nielsen's

10 Usability Heuristics

-  Visibility of system status
-  Recognition rather than recall
-  Match between system and the real world
-  Flexibility and efficiency of use
-  User control and freedom
-  Aesthetic and minimalist design
-  Consistency and standards
-  Helps users recognise, diagnose, and recover from errors
-  Error prevention
-  Help and documentation

The Principles of Design

(how to use the tools to make art)

Pattern		A regular arrangement of alternated or repeated elements (shapes, lines, colours) or motifs.
Contrast		The juxtaposition of different elements of design (for example: rough and smooth textures, dark and light values) in order to highlight their differences and/or create visual interest, or a focal point.
Emphasis		Special attention/importance given to one part of a work of art (for example, a dark shape in a light composition). Emphasis can be achieved through placement, contrast, colour, size, repetition... Relates to focal point.
Balance		A feeling of balance results when the elements of design are arranged symmetrically or asymmetrically to create the impression of equality in weight or importance.
Proportion/ Scale		The relationship between objects with respect to size, number, and so on, including the relation between parts of a whole.
Harmony		The arrangement of elements to give the viewer the feeling that all the parts of the piece form a coherent whole.
Rhythm/ Movement		The use of recurring elements to direct the movement of the eye through the artwork. There are five kinds of rhythm: random, regular, alternating, progressive, and flowing. The way the elements are organized to lead the eye to the focal area. Movement can be directed for example, along edges and by means of shape and colour.

Also:
 Perspective
 Repetition
 Variety
 Unity

Try to apply these principals to your analysis.

Workshop

Options:

- Poster Campaign #letsbeblunt
- Animation concepts around lets be blunt.
- Freelancer.com – Logo Design Competitions.
- Evaluate a website in brief.