

< GENERIC / CLUSTER CORE TRACK-1: CORE: GRAPHICS
DESIGN >

<COURSE CODE: 21UCG501, COURSE NAME: INTRODUCTION TO
COMPUTER ANIMATION>

CREDITS: 4

MARKS: 40 + 60

UNIT-I

PRINCIPLES AND PROCESSES: IDEAS GENERATION

What is animation?

Animation is a method of photographing successive drawings, models, or even puppets, to create an illusion of movement in a sequence. Because our eyes can only retain an image for approx. 1/10 of a second, when multiple images appear in fast succession, the brain blends them into a single moving image. In traditional animation, pictures are drawn or painted on transparent celluloid sheets to be photographed. Early cartoons are examples of this, but today, most animated movies are made with computer-generated imagery or CGI.

To create the appearance of smooth motion from these drawn, painted, or computer-generated images, frame rate, or the number of consecutive images that are displayed each second, is considered. Moving characters are usually shot “on twos” which just means one image is shown for two frames, totaling in at 12 drawings per second. 12 frames per second allows for motion but may look choppy. In the film, a frame rate of 24 frames per second is often used for smooth motion.

Different Types of Animation:

1. Traditional Animation
2. 2D Animation (Vector-based)
3. 3D Animation
4. Motion Graphics
5. Stop Motion

Traditional

This is one of the oldest forms of animation in film. It's sometimes called cel animation. As mentioned above, in traditional animation, objects are drawn on celluloid transparent paper. In order to create the animated sequence, the animator must draw every frame. It's the same

mechanism as a flipbook, just on a grander scale. Traditional is most often 2D animation.

2D (Vector)

2D animation can fall under traditional animation like most early Disney movies — Pinocchio, Beauty and the Beast, etc. But there is something called Vector-based animation that can be 2D without being traditional.

With Vector-based, the motion here can be controlled by vectors rather than pixels.

Images with familiar formats like JPG, GIF, BMP, are pixel images. These images cannot be enlarged or shrunk without affecting image quality. Vector graphics don't need to worry about resolution. Vectors are characterized by pathways with various start and end points, lines connecting these points to build the graphic. Shapes can be created to form a character or other image.

Vector-based animation uses mathematical values to resize images, so motion is smooth. They can re-use these creations so the animator doesn't need to keep drawing the same characters over and over again. You can move around these vectors and animate that way. This is also helpful for animators who aren't the best drawers.

3D

Today, 3D or computer animation is the most common type. But just because computers have stepped in instead of actual drawings, it's not necessarily easier. The computer is just another tool, and 3D animation is still a long, intense process.

In 3D animated movies, the animator uses a program to move the character's body parts around. They set their digital frames when all of the parts of the character are in the right position. They do this for each frame, and the computer calculates the motion from each frame.

Animators adjust and tweak the curvatures and movements their characters make throughout.

Motion Graphics

Motion Graphics are pieces are digital graphics that create the illusion of motion usually for ads, title sequences in films, but ultimately exist to communicate something to the viewer. They're often combined with sound for multimedia projects.

They're a type of animation used mostly in business, usually with text as a main player.

Stop Motion

Stop motion encompasses claymation, pixelation, object-motion, cutout animation, and more. But the basic mechanics are similar to the traditional style like a flipbook. However,

instead of drawings, stop motion adjusts physical objects in each frame.

If moved in small increments, captured one frame at a time, the illusion of motion is produced. Whether puppets, clay, or even real people, these manual adjustments can make it a long, arduous process.

Stop motion is definitely an older form of animated storytelling, especially compared to 3D computer animation.

The Fundamental Principles of Animation

It all started after the 30s when Walt Disney noticed that the level of animation was inadequate for some new story lines. Classes for his animators were set up under the instruction of Don Graham. Before those classes, the animations were made with little or no reference to nature. Out of these classes grew a new way of drawing moving human figures and animals, where the analysis of real action became important to the development of animation. After a while, each technique was named and they became known as the fundamental principles of animation.

Ultimately, the animator must have a sense of what makes an inanimate character alive.

The principles are:

1. Timing
2. Ease In and Out (or Slow In and Out)
3. Arcs
4. Anticipation
5. Exaggeration
6. Squash and Stretch
7. Secondary Action
8. Follow Through and Overlapping Action
9. Straight Ahead Action and Pose-To-Pose Action
10. Staging
11. Appeal
12. Personality

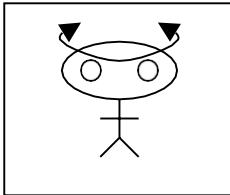
Simply memorizing these principles isn't the point. No one will care whether or not you know this list. It's whether or not you truly understand and can utilize these ideas that matter. If

you do, it will show automatically in your work.

1. Timing

Timing is the essence of animation. The speed at which something moves gives a sense of what the object is, the weight of an object, and why it is moving. Something like an eye blink can be fast or slow. If it's fast, a character will seem alert and awake. If it's slow the character may seem tired and lethargic.

J. Lesseter's example. Head that turns left and right.



- Head turns back and forth really slow: it may seem as if the character is stretching his neck (lots of in between frames).
- A bit faster it can be seen as saying "no" (a few in between frames)
- Really fast, and the character is reacting to getting hit by a baseball bat (almost none in between frames).

2. Ease In and Out (or Slow In and Out)

Ease in and out has to do with gradually causing an object to accelerate, or come to rest, from a pose. An object or limb may slow down as it approaches a pose (Ease In) or gradually start to move from rest (Ease Out).

For example, a bouncing ball tends to have a lot of ease in and out when at the top of its bounce. As it goes up, gravity affects it and slows down (Ease In), then it starts its downward motion more and more rapidly (Ease Out), until it hits the ground.

Note that this doesn't mean slow movement. This really means keep the in between frames close to each extreme.

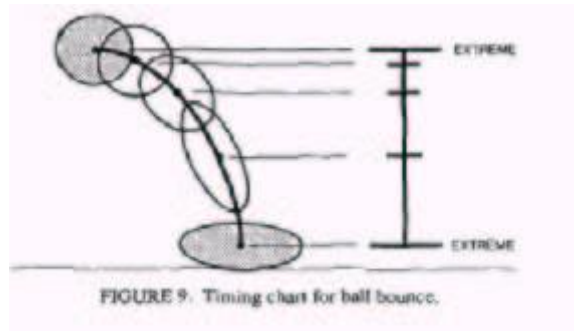
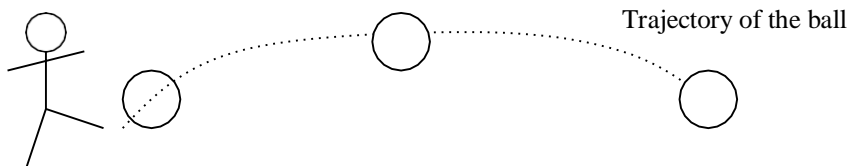


FIGURE 9. Timing chart for ball bounce.

3. Arcs

In the real world almost all action moves in an arc. When creating animation one should try to have motion follow curved paths rather than linear ones. It is very seldom that a character or part of a character moves in a straight line. Even gross body movements when you walk somewhere tend not be perfectly straight. When a hand/arm reaches out to reach something, it tends to move in an arc.

Simple example – Kicking a ball



4. Anticipation

Action in animation usually occurs in three sections. The setup for the motion, the actual action and then follow-through of the action. The first part is known as anticipation.

In some cases anticipation is needed physically. For example, before you can throw a ball you must first swing your arm backwards. The backwards motion is the anticipation, the throw itself is the motion.

Anticipation is used to lead the viewers eye to prepare them for the action that follows. Longer period of anticipation is needed for faster actions. Example, a character zips off screen leaving a puff of smoke. Usually just before the zip, there is a pose where the characters raises a leg and bends both arms as if he's about to run. That's the anticipation pose for the off screen run.

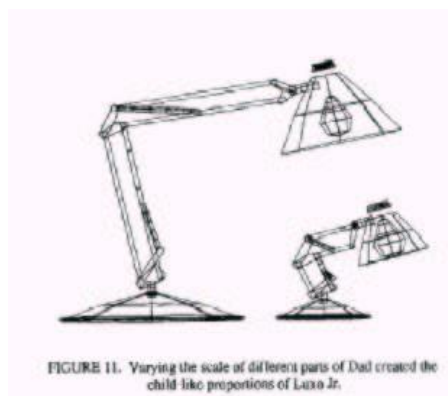
Generally, for good clear animation, the viewer should know what is about happen (anticipation), what is happening (the actual action itself) and what happened (related to follow through).

5. Exaggeration

Exaggeration is used to accent an action. It should be used in a careful and balanced manner, not arbitrarily. Figure out what the desired goal of an action or sequence is and what sections need to be exaggerated. The result will be that the animation will seem more realistic and entertaining.

One can exaggerate motions, for example an arm may move just a bit too far briefly in an extreme swing. Generally when animating to dialogue, one listens to the track and picks out areas that sound like they have more stress or importance, and then tends to exaggerate poses and motions that fall at those times.

The key is to take something and make it more extreme in order to give it more life, but not so much that it destroys believability. Example: exaggerating the lamp proportions to give



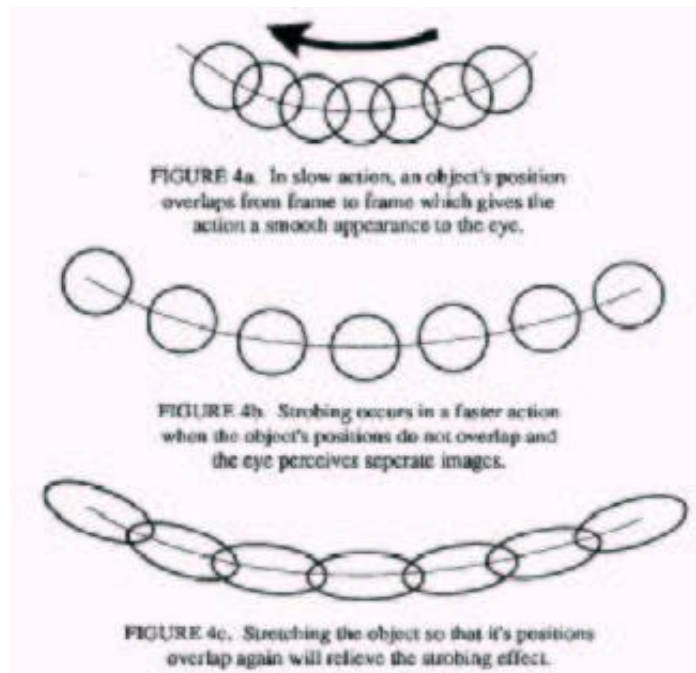
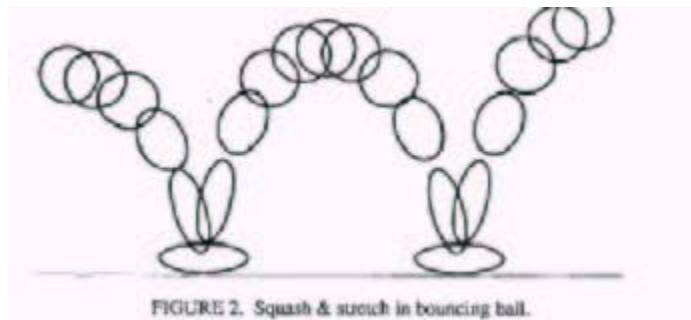
a sense of dad and son.

6. Squash and Stretch

Squash and stretch is a way of deforming an object such that it shows how rigid the object is. For example if a rubber ball bounces and hits the ground it will tend to flatten when it hits. This is the squash principle. As it starts to bounce up it will stretch in the direction it is going. Squash and Stretch was also initially done to prevent strobing due to lack of motion blur.

An important note about squash and stretch, is that no matter how an object deforms, it should still appear to retain its volume. The most obvious usage in character animation is muscles. When a muscle is contracted it will squash and when extended, it stretches.

Rigid objects can still squash and stretch in a way. Think of the lamps above. The lamp itself is a rigid metal object. But before it jumps it anticipates the action by crouching down and



bending. That bending is basically squash and stretch.

7. Secondary Action

Secondary action creates interest and realism in animation. It should be staged such that it can be noticed but still not overpower the main action. A good example of this is a character at a table acting and delivering their main acting. A side piece of acting business might be the character thumbing their fingers on the table. This isn't the main action say, perhaps it occurs as the other hand is more largely gesturing and your focus is on the face.

But it is something that the character is doing/acting that adds a more realistic and natural feel to the animation. As mentioned, it must be staged so that the main action isn't overpowered. It's the kind of thing that is usually more subtle or can be felt more than noticed immediately.

8. Follow Through and Overlapping Action

Follow Through is the same as anticipation, only at the end of an action. It is usually animated as something goes past its resting point and then coming back to where it would normally be. For example, in throwing a ball, you put your hand back, that's anticipation, it's the preparation for the throwing action itself. Then you throw the arm comes forward for the main action. Follow Through is then the arm continuing past the normal stopping point, overshooting it and then coming back. The arm has continued or "followed through" on the action it was doing before returning back to rest.

Overlapping Action is an action that occurs because of another action. For example if a dog is running and suddenly comes to a stop, its ears will probably still keep moving for a bit.

Another example, if an alien is walking and it has an antenna on it, the antenna will probably sway as a result of the main body motion. This is overlapping action. It is caused because of the main motion and overlaps on top of the main motion.

9. Straight Ahead Action and Pose-To-Pose Action

There are 2 basic methods to creating animation. Straight ahead animation is one where the animator draws or sets up objects one frame at a time in order. For example, the animator draws the first frame of the animation, then draws the second, and so on until the sequence is complete. In this way, there is one drawing or image per frame that the animator has setup. This approach tends to yield a more creative and fresh look but can be difficult to time correctly and tweak.

The other approach is Pose-To-Pose animation. Pose to Pose is created by drawing or setting up key poses and then drawing or creating inbetween images. This is the basic computer "keyframe" approach to animation. It is excellent for tweaking timing and planning out the animation ahead of time. You figure out the key poses, and then the motion inbetween is

generated from that. This is very useful when specific timing or action must occur at specific points. You always know exactly what will happen.

The basic difference is with Pose-To-Pose you plan out, and know exactly what will happen ahead of time, whereas with Straight Ahead, you're not quite sure how things will turn out until you are done. With computers, some people tend to create a hybrid of the two, planning out the overall poses, and then straight ahead animating the stuff inbetween.

10. Staging

Staging is presenting an action or item so that it is easily understood. An action is staged so that it is understood; a personality is staged so that it is recognizable; an expression so that it can be seen; a mood so that it will affect the audience.

In general, it is important that action is presented one item at a time. If too much is going on the audience will be unsure what to look at and the action will be "upstaged".

With characters, it is important to really think about whether or not each pose for an action adequately and correctly reads to the audience. You should also make sure no two parts of a character contradict each other (unless it's intended). For example if you're staging a sad pose you may have the character hunched over with his arms hanging at his sides and a high camera angle...but if you give him this big grin on his face it won't fit with the rest of the pose.

Staging multiple characters is also an important issue. Generally you want to always make sure you know where the audience is looking within the shot. Background characters must be animated such that they are still "alive", but not so much that they steal the viewer's attention from the main action. Staging like this is also related to a lot of directing and editing principles.

11. Appeal

Appeal means anything that a person likes to see. This can be quality of charm, design, simplicity, communication or magnetism. Appeal can be gained by correctly utilizing other principles such as exaggeration in design, avoiding symmetry, using overlapping action, and others. One should strive to avoid weak or awkward design, shapes and motion.

It's important to note that appeal doesn't necessarily mean good vs. evil. For example, in Disney's animated classic "Peter Pan", Captain Hook is an evil character, but most people would agree that his character and design has appeal. The same goes for Hopper in "A Bug's

Life". Even though he's mean and nasty, his design and characterization/personality still has a lot of appeal.

12. Personality

This word isn't actually a true principle of animation, but refers to the correct application of the other principles. Personality determines the success of an animation. The idea is that the animated creature really becomes alive and enters the true character of the role. One character would not perform an action the same way in two different emotional states. No two characters would act the same. It is also important to make the personality of a character distinct, but at the same time be familiar to the audience.

Personality has a lot to do with what is going on in the mind of the character, as well as the traits and mannerisms of the character. It is helpful to have some background in acting, and certainly taking an acting or improve class as an animator is a good idea.

MIXED-MEDIA ANIMATION: DAD'S DEAD

The multi award-winning Dad's Dead, made by Chris Shepherd, is an excellent example of a mixed-media animation, and one that also points out the relationship between live action and animation. Shepherd had returned to his roots in Liverpool and discovered that the Eileen Craven Primary School, which he had attended as a boy, had been vandalised and burnt out. The destruction of the school prompted Shepherd to consider his memories of school and the formative context that it had been, and his mixed feelings about its influence. He was keen to find an approach to the subject matter where the animation could facilitate a film taking place in someone's head, and that the assumed 'innocence' of animation could be contradicted by dark, fantastic and subversive things taking place in an ordinary, run-down, derelict, everyday terrain.

Having completed a provisional shooting script, Shepherd cast 'real scouser', Ian Hart, for his voice-over, and shot live-action material in six separate shoots over seven months, attempting to 'build the film up like a painting', creating an animatic alongside the live-action material that would suggest how the animation would interact and counterpoint the dramatic action featuring Johnno, the dysfunctional youth at the heart of the story. Shepherd wanted to make a film that people might find disturbing and perhaps not like, but ironically, the film has been embraced as a challenging portrayal of the way that 'nostalgia' is easily triggered, but may not be comforting if remembered as it actually was.

Shepherd encourages the view that the only effective way to make a film is to be 'true to

yourself' and to explore your own world carefully for the inspiration it can bring, stressing 'what can be boring to you can be interesting to someone else if presented as an engaging story'. This chimes with the view of John Lasseter – the director of Toy Story (Pixar/Walt Disney Pictures, 1995) and Toy Story 2 (1999) – that research and observation are absolutely vital because 'nothing is more interesting or rich than what is actually there, once you look at it with a truthful, but creative eye'. Shepherd's story, the memory of the relationship between the narrator and Johnno, recalled in a range of challenging vignettes – destroying an ice cream van; spray-painting dead pigeons and torturing animals; Johnno lying about his father's death; Johnno's abuse of a blind man he supposedly cares for; and the torching of a run-down flat – also explores the received associations of mediated imagery. Shepherd is highly successful in offering a commentary on the uses and meanings of animated imagery while using animation to reinvent controversial documentary-style domestic drama.

THE ANIMATOR AS INTERPRETER:

Animation is simply the illusion of movement.

Translation is when an object moves from one point to another over a period of time.

Since it is over time, this implies it has a speed. In our case speed is nothing more than the number of pixels to move per update.

Remember, by default our programs run at 60 FPS. Meaning that a speed of 1 pixel per update will result in 60 pixels of movement in 1 second.

Translation What can we translate?

Anything on the screen, graphics, text, etc. Anything that has a variable location can be moved.

Where do we perform the translation in code?

Since the speed is measured in pixels per update, it stands to reason that our translation code will be written in the Update command

Remember, the Draw command simply visualizes the objects using the data we edit in Update, such as a coordinate.

How do we do it?

Since location is represented as an (x,y) coordinate, we can actually modify both values to

get different results

If we modify the x component the object will move left or right. And up and down for a change in the y component.

If we modify both at the same time we get a diagonal movement. Visualize the movement like a slope, where the y speed is the “rise” and the x speed is the “run”

Example of translation of an image with an x speed of 2 and y speed of 1. This implies a shallow angle.

Question: What if the speed was negative?

The code... Assumption: Where: Syntax: Adding the speeds to itself

You are drawing an image on the screen using a Rectangle named imgRec for placing and size. Of course your rectangle may be called anything logical

You have two variables, xSpeed and ySpeed that maintain how fast the image is moving in each direction.

Where:

Your translation code will go in Update before any physics or collision detection code is executed

Syntax: Adding the speeds to itself

`imgRec.X = imgRec.X + xSpeed; OR imgRec.X += xSpeed;`

`imgRec.Y = imgRec.Y + ySpeed; OR imgRec.Y += ySpeed;`

Speed of Movement

Because a rectangle's xy coordinates are integers this limits to a minimum speed of 1 pixel per update or 60 pixels in a second.

Sometimes this is just simply too fast for your game.

The problem is that we can not move by a part of a pixel, so how can we move slower?

Speed of Movement

To achieve this we will need to make a few small changes:

xSpeed and ySpeed need to be floats instead of ints. (allowing for < 1 pixel)

We need two more floats storing the xy coordinate of the rectangle, e.g. xLoc and yLoc for x location and y location. Initially they have the same location as the rectangle xy.

When adding speed we add to the variables not the rectangle

This will allow for a fraction of a pixel being stored.

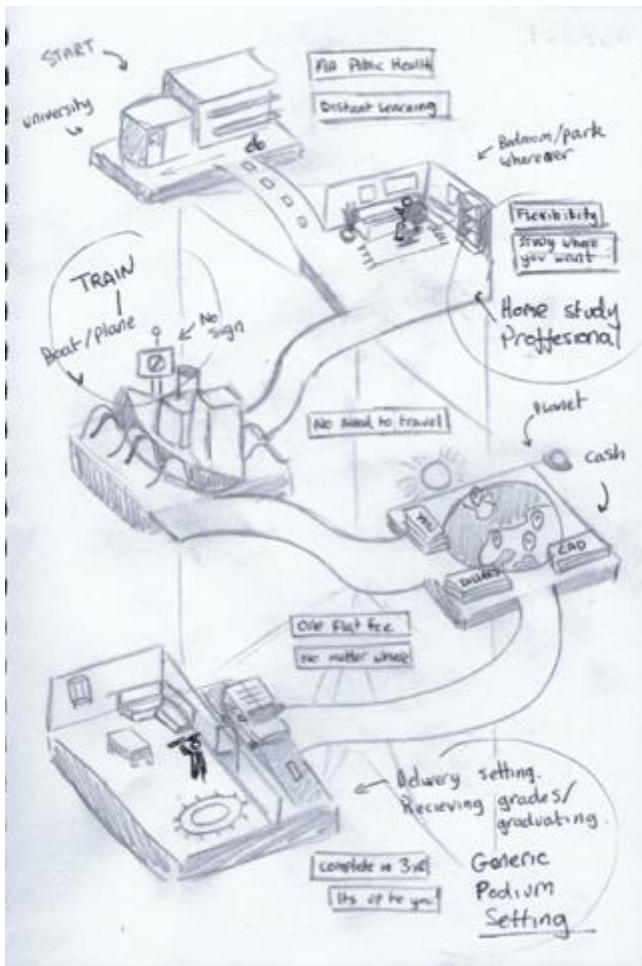
Apply the new location to the rectangle by casting the float to an int

E.g. $\text{imgRec.X} = (\text{int})\text{xPos}$;

What this does is remove decimals, so both 2.2 and 2.8 will result in 2. This will cause some pixels to be repeated in multiple updates, effectively slowing down movement while still maintaining an accurate location.

CREATIVE CONSIDERATIONS

All animation begins with the brief and the idea. It can start looking like this:



The idea can be written, sketched, or even filmed – any way you can get the thought out of your head and turned into something to review. This can be something incredibly simple. Imagine it as the blurb from the back of your favourite book – it isn't too detailed, but it gives you the hook.

From there come the words. The idea needs some words for directions and this will come down to a script, visual direction notes or research.



Move to a visual of the stomach. It's filled with food that discolours the stomach acid. Little bacteria monsters ooze out of the water and latch onto the lining to bite onto it.

"...or, as we call it, following a neutropenic diet."

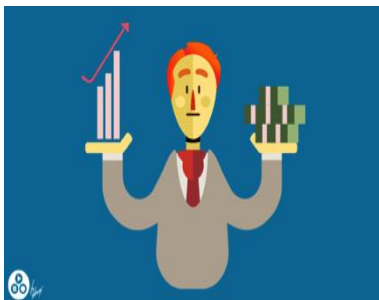


Our character drinking from juice/tap water but looks a little unwell, by sweating and blushing. A hand comes in and takes the drink away. Text accompanies on screen.

As animators, we don't tend to play well with words and so like to add visuals wherever we can.

In the image above, the drawings accompanying the words are what we would call 'thumbnails'. It's the process of taking those words and creating visual ideas from them in handy bite size forms.

From there we dive into the more nitty gritty – the detail. The process starts gaining a look and style. This stage is what we'd call the concept or 'mood board'. With a lot of help from research materials and inspiration, your idea and sketches can become something like this:



The next step is called a 'storyboard'. This is where the animator takes all those thumbnails

and fleshes them out into video form to create a sense of rough animation:

<https://youtu.be/cFmcTp8KgKA>

This particular process is all about understanding the timing and flow of the animation. How do the characters look on screen? How long does the animation play for? Are there parts that work and don't work and, finally, do the words work on screen?

Speaking of which, it is at this stage that getting a voice-over starts to become important for animators. A voice-over and music can really help drive an animation from being 'good' to 'great', and having a voice-over before the animation even happens is important as it helps the animator understand the pacing of the video.

With everything agreed and all parties "cushty" the main course starts being prepared – the animation. This process will take the most time, and can take anywhere from several days to several weeks – maybe even months!

So, what does this involve? Well, the animator needs to create and design characters, build backgrounds, plan shots, and make everything move.

There are ways to help reduce time during this process. The animator can create duplicating characters, be aware of what will or won't move in the scene, and re-cycle animation such as walks and runs.

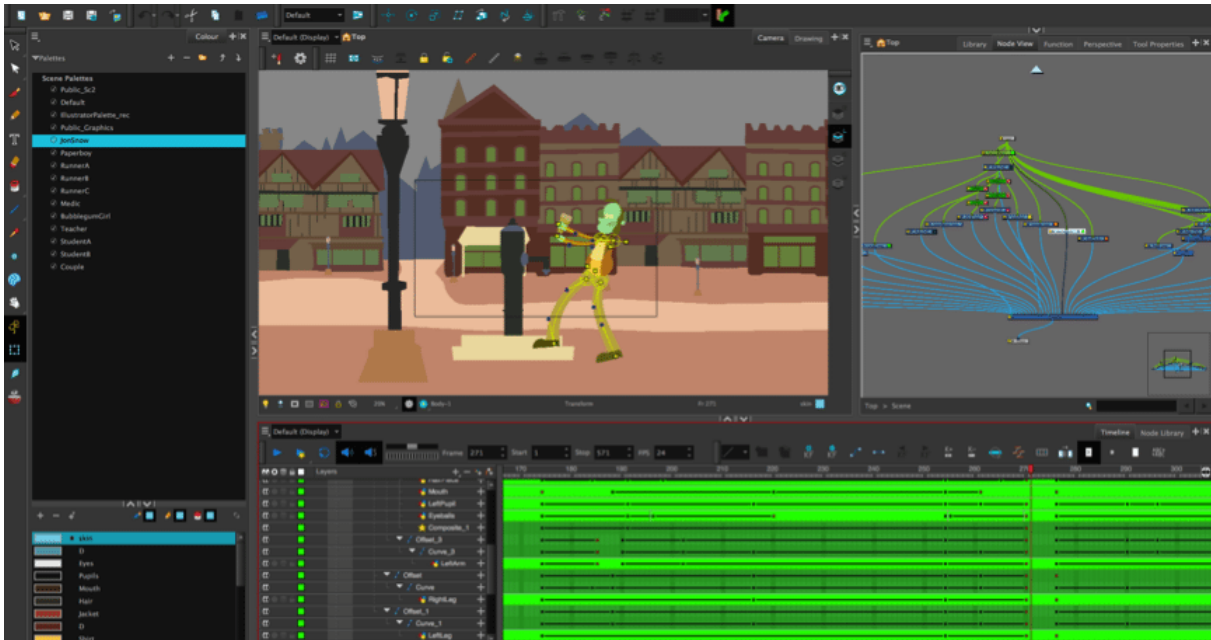
There are also tools in modern software that help aid the animator – tools that are like a second pair of hands when compared to ye' old times when the process was only drawings on paper!

Another thing that changes the overall production time of animation is down to the budget and quality of the style. The simpler the style, the easier it is to create. The more complex, the longer.

It's like preparing a delicious sandwich. The more ingredients you have in it, the longer it takes before you can eat it!

It also depends on what style of animation the brief wants to pursue. For example, a 3D project can take longer than a 2D one. A hand drawn animation can take longer than a digital animation. There are many factors to consider.

Here is a look at what an animator, or more specifically, a 2D digital animator is looking at during this step:



As you can see, there is a lot going on here! But it's an animator's job to bring a story to life.

With the animation done and many hours of sleep lost, there's light at the end of the tunnel, but there's a final hurdle – the edit and polish aka 'Post Production'.

There may be areas where the animator has made a mistake, or perhaps some colours don't work on review, so this is the time to go through the animation with a fine toothcomb and iron out the problem areas.

Music is applied, and visual effects such as lights and shadow are added.

We are at the end of the road now and a review is submitted. Should the animation be a success, it is released into the wild and begins its journey of views, shares and critique and

the animator moves on to their next job – or more likely, their bed.

Of course, it is important to note that during this whole process the customer is always involved. Getting feedback is incredibly important for animation as the further along the process goes, the harder it becomes to make changes. Even a simple character change could amount to a couple of days of work.

The customer providing feedback helps make sure the animation is on track, and all the milestones that an animation needs to go through helps make sure that any changes that are necessary happen as soon as possible.

SCRIPT DEVELOPMENT

What Is a Script?

A script is a document that comprises setting, characters, dialogue, and stage directions for movies, TV shows, and stage plays. When directors stage such productions, they follow the instructions provided by the script. In live theatre, script writers are playwrights, and the scripts are also known as playscripts. In film and television, script writers are called [screenwriters](#). A film script is called a screenplay, and a TV script is called a [teleplay](#).

The script starts the artistic process for a dramatic performance, but film, TV, and theatre are all inherently collaborative. Directors, actors, and designers interpret the script. Sometimes these professionals uncover new insight about the material that the original screenwriter may have never imagined during the [scriptwriting process](#). While a great script forms the foundation of a great performance, it is not the only factor in the artistic process.

15 Elements of Screenplay Formatting

The vast majority of TV and film screenplays and teleplays follow an industry standard script format. Key formatting standards include:

1. **Page margins:** You should have a 1.5-inch margin on the left of the page, a 1-inch margin on the right of the page, and 1 inch of white space on the top and bottom of the page.
2. **Proper font:** An industry standard screenplay uses size twelve Courier font.
3. **Title page:** The script should have a title page with no content apart from the title, author's name, contact information and representation (if applicable).
4. **Page numbers:** Page numbers mark every page of the script apart from the first page.
5. **Character names:** When characters speak, their names appear in all capital letters, centered on the page, and indented 3.7 inches from the left side of the page.
6. **Dialogue:** Lines should be centered on the page, below the name of the character speaking. Each dialogue block should be indented 2.5 inches from the left side of the page.
7. **Voiceover:** Characters speaking in voiceover signified by "V.O." next to their names.
8. **“Off-screen” or “off-camera”:** Characters who can be heard off screen signified as O.S. (off-screen) in film scripts and O.C. (off-camera) in TV scripts.
9. **Dialogue descriptions:** These should be centered in parentheses, directly above the dialogue.
10. **Action lines:** Descriptions of action are aligned with the left margin of the page. Action lines should always appear this way, never in parentheses.
11. **Proper character introductions:** Characters' names should be capitalized the first time they appear. (This applies for everyone from the main character to unnamed extras passing through a scene.)
12. **Scene headings:** Often called sluglines, these belong in all caps, aligned left on the page.
13. **Locations:** Scene headings must always be preceded by “EXT.” for "exterior" or “INT.” for "interior."
14. **Transitions:** Instructions like "FADE OUT" or "BLACKOUT" appear in all caps, aligned with the right margin.

15. **Minimal camera directions on spec scripts:** On a TV show or feature film, camera and lighting choices belong to the director and their photography team. Refrain from including camera or lighting directions unless it's absolutely essential.

4 Elements of a Playscript

Playscripts follow a similar format to screenplays and teleplays, but there are a few key elements that make playscripts unique:

1. **1. Dramatis personae:** Playscripts feature a dramatis personae, a list of character descriptions after the title page.
2. **2. Stage directions:** Instead of action lines, plays include stage directions, which can include particular blocking notes or instructions for the actors. Typically, playwrights indent and italicize stage directions.
3. **3. Dialogue:** Plays are often [dialogue](#)-heavy and include monologues. The dialogue can be in prose or [verse](#).
4. **4. Acts:** Playscripts typically feature more than one act, building for suspense and allowing for set changes onstage. Though screenplays may be [broken up into acts](#), they rarely have act breaks the way playscripts do.

Types of Screenwriting and Playwriting Software

Most screenwriters and playwrights use screenwriting software to automatically format their scripts. The industry standard scriptwriting software Final Draft offers templates for most script styles, including spec scripts and shooting scripts (for both screenplays and teleplays), as well as playscripts. It also provides script templates of how to properly format examples of each type.

Animated cartoons are fun to watch and a great challenge to create, as they require creativity, ingenuity, and detail. A successful animated cartoon starts with a good script that fleshes out the characters, setting, and plot of the story. To write a script for an animated cartoon, start by brainstorming unique ideas that take full advantage of the unlimited possibilities of animation. Then, create a draft using the correct [\[\[Write-a-Screenplay|script writing format and language](#). You should then polish the script so it is ready to be animated and brought to life.

Brainstorming Your Cartoon

Come up with a unique plot. The beauty of animation is that you can come up with the craziest plot imaginable and have it drawn into life. Embrace the possibilities of animation and create a plot that is unique and imaginative. Avoid familiar plot ideas that you've heard before. Challenge yourself to create a plot that puts a unique spin on a familiar idea.[\[1\]](#)

- For example, rather than start with a familiar plot like boy meets girl and tries to get girl, you may go for a plot like boy meets cyborg girl and tries to win her heart by fighting off killer dinosaurs.

Focus on an interesting main character or cast of characters. Create a main character that has distinct characteristics or personality traits. Give your main character a backstory that makes them particular or strange. You may use a real life person as inspiration for your main character or create a main character from scratch.[\[2\]](#)

- For example, maybe you have a main character who is a young girl born with a third eye. Or perhaps you have a main character who is a creature from the swamp, half-man, half-animal.
- You can even have a main character that is not human, such as a walking square or a talking lamp.
- You can also focus your story on a cast of characters, such as an oddball family or a pair of strange siblings.

Explore a surreal or strange setting. Make up a setting by combining your hometown with your favorite planet. Or exaggerate a setting, such as your high school, by putting it in a black hole in space. Use the setting as inspiration for your characters and your plot.[\[3\]](#)

- For example, if you decide to use a setting like your high school in space, you may then come up with characters like teenage aliens who go to the high school.

Brainstorm with a partner. Tossing ideas back and forth with a partner may help you generate a stronger story for the animation. Ask a friend, peer, or family member to brainstorm ideas with you. Try yelling out a character idea and then having your writing partner respond with a different idea or add on to it.^[4]

- You can also try making a [mind map](#) with your writing partner to help generate story ideas.

Create [storyboards](#). Bring your brainstorming ideas to life by drawing storyboards for a few possible scenes in your script. Draw out squares on plain paper and sketch out details like setting, time of day, and scenery for the scene. Include character dialogue and action in the storyboards. See how your ideas work visually in the storyboards.^[5]

- Do storyboarding for a few potential plots or characters you are thinking about. You can then tweak your ideas when you sit down to write the draft of the script.

Watch examples of animated cartoons. Get a better sense of the genre by watching cartoons that are considered unique and well-written. Listen to the dialogue of the characters. Notice how the plot in each cartoon moves forward in interesting and unexpected ways. Watch a mix of animated television shows and films. You may watch:

- *The Simpsons*
- *South Park*
- *Rick and Morty*
- *BoJack Horseman*
- *The Powerpuff Girls*
- *Up*^[6]
- *Steven Universe*
- *The Amazing World Of Gumball*

Script Development

what a Script is

According to the dictionaries, A Script is nothing but **“The written text of a play.”** In other words, What is finally seen and heard is written on the page.

Script writing for animated video:

Animated video is a fantastic medium for selling the message, as there is no better way of communicating specific information, training staff, or telling the world about your business. A video will become authentic, when it doesn't feel scripted. The way we learned to write in college won't work for writing an animation video script. Therefore, it must be absolutely word perfect in every aspect. Every detail, every line of a creative script will come back to the main theme. Your approach exactly should be in a way to present your core message to your audience successfully. Even when your script is just for three or five minutes of animated video. Take hours or if possible, days to write, rewrite and fine-tune the script to perfection. Some points to remember when script writing for an animated video,

- Forget what you are good at, focus on what the customer wants
 - Consider the length, keep it short
 - Do the unexpected, surprise your audience
 - Communicate effectively, grab attention
 - Connect emotionally
 - Tell stories
 - Be conversational
 - Simplify your core message
 - Make it personal
 - Add humour
 - Wrap up tightly
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Keys to write an animated video script:

There are three main keys that can be kept in mind when writing a script for animated video: 1) Structure of the script: The narrative structure of a script must flow in a logical pattern to make it meaningful so that it is very compelling for the audience to listen. The script structure is the platform on which we can build the call to action. The common and effective structure for writing a script is by introducing a problem that your audience usually face and explaining how your product becomes the suitable solution. 2) Animated characters used: Defining solid impressive animated characters will be the starting point of a compelling script. Fewer characters with more dialogue will build an emotional connection with the viewers. This makes the animated video look more realistic and keeps your script integrated with the central message. 3) Call to action: When closing an animation video, the viewer will see himself/herself in your characters and this emotional connection allows the message to take hold. Placing the call to action on the top of this emotional connection prepares the script for success. The best script aims at communicating a message that directly leaves your viewers to act immediately.

Kick start your script-writing mission:

The first thing to think when preparing a script is to put yourself in the audience's shoes. Your viewers will always have a special filter like **“what's in it for me?”** Your script needs to cater exactly for that question. Throughout the script, try answering questions which your audience might have. The process of writing a script outline can be both challenging and frustrating for anyone who isn't a writer by trade. Here are some simple steps to follow when writing scripts for animated videos.

1. Brief your concept first:

The first thing you need to know is what is the purpose of the video? Why you need [animated videos](#)? And what to cover? Creating a brief allows you to document the answers to your really important project questions. It does not have to be fancy and need not to follow a specific formula. Even if it seems like an easy step to skip, it's really worth the effort. There are many key questions that you need to ask yourself before crafting an effective video script.

- Who is your target audience?
 - What is that one big problem your product could solve?
 - What is the goal of the video?
 - Why are we making the animated video and to whom?
 - What is the core theme upon which your video is built?
 - What is the key learning expected from the video?
 - What are all the call to actions?
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2. Limit your word count:

When writing a video script while making your own animated video, there is always a constraint with respect to the number of words you use in your script.. The optimal length for an animated video is 90 seconds. You should always aim to hook your audience to the video within the first 7 seconds, as this is when they decide whether to continue listening or not. You might say, **“My product is so awesome and I will not be able to explain it in a few words”** The script is the first chance to work on animated video length and you can do that with word count. You can notice that some movie trailers are more exciting than the movie itself. That’s because a trailer is limited by a time constraint. Also, do not try to dump a whole bunch of information about your business within those few seconds of your video. Then the audience will not be able to decipher the information shown in the animated video. As you know your business better than anybody else, you are the one who would know the kind of information you want your audience to know. Deliver the same in the way they would like. We can figure out how to outline an effective demo script by considering the word count:

- 45 seconds - 90-110 words
 - 60 seconds - 120-170 words
 - 90 seconds - 200-250 words
 - 2 minutes - 250-300 words
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3. Adopt a consistent script writing methodology:

By now, you would have understood the effect of an animated video on your audience. Your animated video will be created around your primary objective. You understand your product since you have already demoed your product a hundred times. So, whatever you write about your product must project it the way you always wanted, right? Script Writing for a training video is different from writing for sales and marketing purposes. The result of every video is different from the other as our creativity also varies from project to project. You started writing only because of the fact that you know a lot about the subject in hand. Adopting a pattern will help you to write effectively and your viewers absorb your content quickly as they move from one video to the other. So, how would you like your video to start?, “This is Bob, and he has so and so problem” or “Are you facing so and so problem?” or “I bet you have this problem and we have the solution”. All of the above three perspectives can be equally effective. But whatever you choose, stick with it. Don’t switch mid-stream like this: “Bob has this problem. See how this solution helps him?” Instead, “Bob has this problem. This is how the solution helped Bob to solve it.” Notice, in example the point of view is consistent. Keeping the point of view consistent prevents your viewers from getting confused. A) The Problem-Solution

method: An effective and familiar method is to explain your solution for a particular problem of viewers. Start by identifying the pain point of your audience and tap into their emotions. Make sure the audience should feel their pain and follow you to know how you can solve their problem. Next, provide your solution for their problem and make sure to give the solution in a short time. Describe the benefits; explain why they should choose yours among the competition. Connect with your audience by a simple and well-known example or case study. Explain in detail how your product/service provides the solution and include the benefits of the features. Lead them to develop a liking towards your product and make them to act immediately.

B) Historical Method: Are you offering an innovative and a better modern alternative? Find out what came before the service or product you are offering? Then use the story to really show off the benefits you are offering and take the viewers on an emotional journey through the way that things used to be done, unlike the problem solving method. It may not be an obvious choice, but can be a great way to explain your business.

C) Direct Explanatory Method: Typically, with a background voice-over this can be a simple start-to-end run-through of your business that you are explaining. Start by introducing your core message, then break it down into three to four easy points and introduce these at the start of video. Then spend a particular duration of time to explain each point in detail. At the end of the video, reinforce those key points that you wanted to get across. It's a way to get positive reinforcement. No matter what method you follow, the part, which makes your script most valuable is the call to action. In a creative and memorable way, introduce your company, logo, and tagline. Add the necessary call to actions naturally. Make the viewers get to know what you want them to do. Make them to react immediately!

4. Draft your script:

As you're writing your own animated video script, keep that age-old saying in mind, **“A picture is worth than a thousand words”** Remember, you're going to create an animated video, so it can have many possible visuals and audible elements to reach your audience for sure. Script every word and do lots of re-dos to get a message as clearly and concisely as possible and make it through. Write in plain, conversational English; make sure you use the language that your target audience will understand. By necessity if you use industry terms, make sure to explain appropriately. For a short animated video, your script can be written using any word processor. Google docs and Ever note are also recommended. You may require script revision history and later your teammates also can use the comments feature. However, if you're creating a more elaborate script and want to format it the way professional scriptwriters do, acquire a special script-writing software to help you format the script. Some of the examples are Final Draft 8, Movie magic Screenwriter 6 etc.

On an ending note,

Animated video is definitely the right tool to sell your product. Before using some great DIY video making tools like [Animaker](#), you need to prepare a well thought out script which reflects how you want the animated video subject to speak. By focusing on writing a clear script with a good story line, you can deliver your business message successfully to the audience. Then probably the next script you will write might be that of your company's success story.

THREE-ACT STRUCTURE

The three act structure is a narrative model that divides stories into three parts — Act One, Act Two, and Act Three, or rather, a beginning, middle, and end. Screenwriter, Syd Field, made this ancient storytelling tool unique for screenwriters in 1978 with the publishing of his book, *Screenplay*. He labels these acts the Setup, Confrontation, and Resolution.

Some writers label these three acts the setup, build, and payoff. Both are correct. But the basic point of each of these acts is that they have their own set of guidelines to develop, build, and resolve a story.

On a basic level, Act One sets up the world, characters, the character's goal, as well as the conflicts or obstacles that are preventing them from achieving their goal. Act Two raises the stakes for the character to achieve the goal, escalating the conflict. Act Three resolves the story with either an achievement of that goal or a failure.

This is not the same thing as story structure, it is an organizational tool to help build your story.

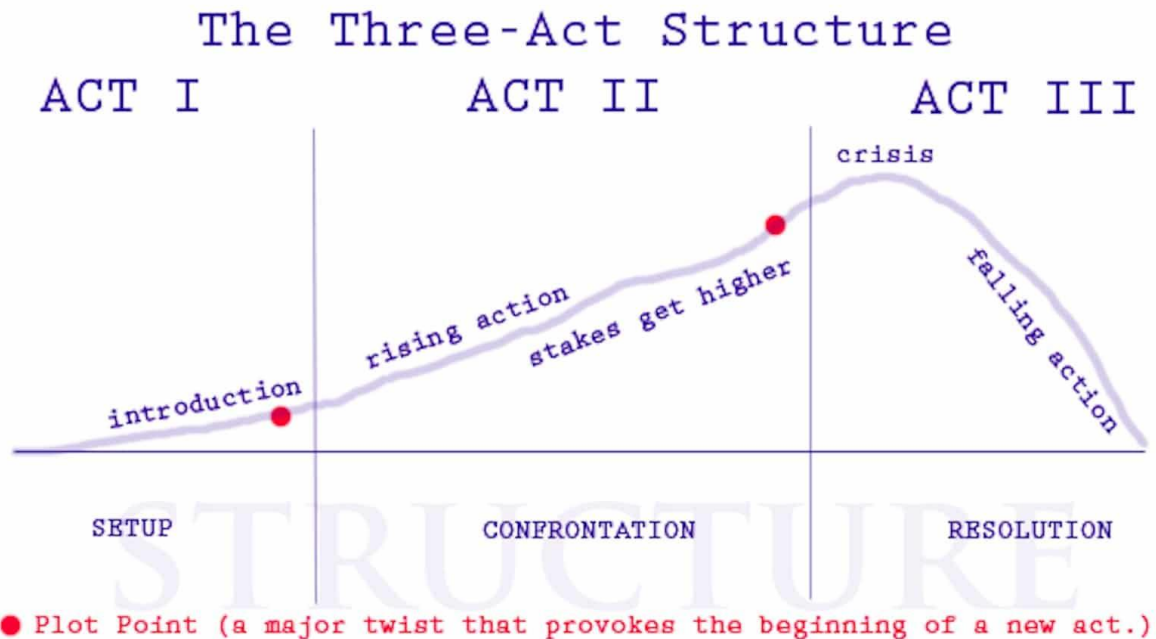
WHAT DOES A 3 ACT STORY STRUCTURE CONSIST OF?

Act 1 — Setup

Act 2 — Confrontation

Act 3 — Resolution

Three act structure Model:



This is pretty standard. We'll go over each act below, but this **should be used as a guideline**, not a **rule book**.

Act I: Setup

The setup involves introduction of the characters, their story world, and some kind of “inciting incident,” typically a conflict that propels us into the second act. It’s *usually* the first 20-30 minutes of a film.

Act II: Confrontation or Build

The middle of your story should raise the stakes, you want the audience to keep watching. This is the main chunk of the story and often leads us to the worst possible thing that can happen to the character.

Act III: Resolution or Payoff

And the end should bring some kind of catharsis or resolution, (regardless if the ending is happy *or* sad).

B-plots

In a visual medium a single idea can be put over pretty quickly, so you’ll need more than a single idea to stop your audience thinking about popcorn.

B-plots can do this. They are miniature three-act tales that weave around your major story and may concern a supporting character.

They usually conclude before the main tale does and often reflect another aspect of your secret objective. Or not. Sometimes they are just the comic relief. But, profound or preposterous, they make a film richer.

Riffs and rhythms

Riffs and rhythms can also make films richer. Think of a film as a piece of music. Verse and chorus pace a song and the best songs usually have more than one hook: If there is an incidental character, bring them back later, then later still. If they eventually change the course of the main story in some way, all the better. Give minor characters teeny three-act stories of their own, even if they’re just the cat on the mat in the corner of the room (part of the success of *Creature Comforts*). If a train passes a window, keep the train passing the window at regular intervals. Then let the train passing somehow move your plot forward (at first it was there to show that your characters lived in poor housing, but later someone misses an important part of a conversation because of the noise it makes).

Go back to your flow chart and scribble out some parallel sets of boxes.

Preparing to script

Got everything sorted? Know what your film's about? Good. Next do the following: Write a two-or three-page synopsis of your story with a paragraph for each scene. Write a one-page synopsis with a paragraph for each act. Write a single paragraph for the back of the video box. Make us want to rent your movie.

Write a one-line teaser for the poster.

Then go back and rewrite your long synopsis. Does it achieve the aims you set yourself when you did the 'What is your script about?' exercise above (see here)? If it doesn't, rewrite it so it does, THEN start on your script.

Cut, cut, cut and cut again!

As you may have gathered by now, writing really is the act of rewriting. Scripts tend to get better the more you go over them.

Having read a lot of scripts and watched a lot of student films, I can confidently state that: many are far too long; few knew when to stop; most would benefit from harsh, critical cutting.

So be brutal – too brutal – with your cutting. If you want a pacy film, start your scenes late and end them early. Hit the road running and let your audience catch up. If I told you to cut 3 minutes from a 15-minute script, then a week later said you could put the cut scenes back in again, I'm willing to bet good money you'd decline!

Comparing the two drafts, you will see that in screenwriting less really is more.

Animated Gags and Comic Events

A high number of animated films aspire to be funny. The American cartoonal tradition effectively established the 'gag' as the lingua franca of the animation vocabulary, and much can be learned from simply watching the sight gags in Disney's *Silly Symphonies* or the work of Chuck Jones, Tex Avery and Bob Clampett at Warner Bros. Theories written on comedy argue that there are only a limited number of gags – between four and seven, depending on who you

believe – and all else is merely variation or dressing on these core comic structures. The following suggested ‘gag’ structures are particularly suited to visual humour: Misdirection and juxtaposition Illogical logic Dramatic irony Puns and parody Exaggeration and understatement Repetition Misdirection and juxtaposition Most comedy is about undermining expectations. Establish one idea or principle, which has a predictable outcome, and then deliberately misdirect the audience to an unexpected conclusion. This is usually done by linking or juxtaposing two unlikely ideas where the incongruity or mismatching of the two ideas creates the joke. John Kricfalusi’s *Son of Stimpy* controversially mixes the two ideas of Stimpy’s lost ‘fart-child’ – itself a bizarre incongruity – with the story of Christ.

Illogical logic

Most animation uses its distinctive language of expression to create worlds with their own codes and conventions, however surreal or apparently ‘illogical’ these principles are, but this is especially important in comic scenarios, where a particular distortion of everyday logic can create jokes. As with misdirection and juxtaposition, this might also resolve itself with a revelation – perhaps a pertinent observation of something that supposedly might or should remain unsaid. Simply telling the truth about a situation is sometimes the most ‘illogical logic’ of all. Bill Plympton’s *I Married a Strange Person* (Universal Studios, 1997) sets up the narrative premise that Grant, the hero, has a satellite-induced boil, which enables him to literally enact his every thought or desire – suddenly his girlfriend’s breasts enlarge to take over the house, during sex, or are twisted into a variety of

balloon animals!