



ANIMATED FILM



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HISTORY OF ANIMATION

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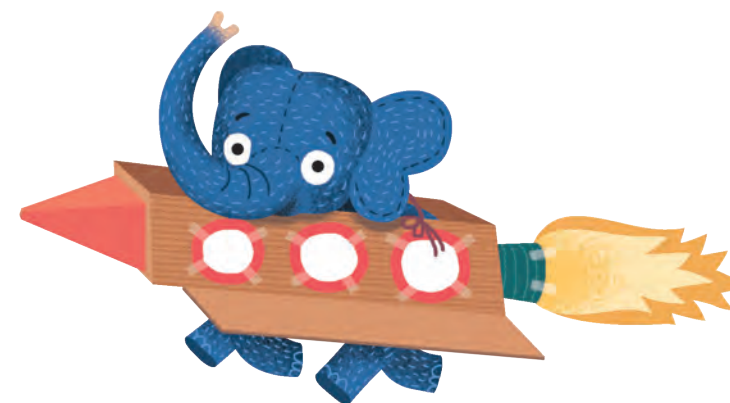
Gentlemen pace about solemnly in tails and top hats. Ladies in frilly dresses trip this way and that. The steam locomotive is on the track and ready for the off. The 19th century was a time of technical progress and invention... And this included optics.

- ❶ Thomas Alva Edison
- ❷ George Méliès
- ❸ Eadweard Muybridge
- ❹ George Stephenson



The invention of film depended first and foremost on the optical illusion of movement, something that was first explored in the early 19th century. As the century wore on, various optical toys, machines and more complex instruments were developed – paving the way for the first cameras and film projectors. As at first

electricity was used for lighting only, machines were operated by hand. At that time, all serious-minded adults thought the idea of humans one day flying to the Moon a crazy one. All serious-minded adults but one, that is: Georges Méliès dreamed of doing it. At least I can visit the Moon in film, he said to himself.



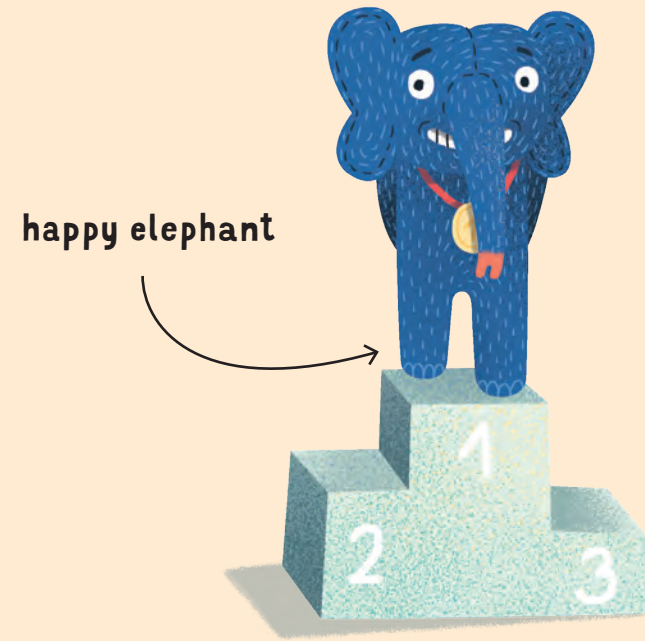
Since that time, technology has come on in leaps and bounds. Today, we have digital cameras, camcorders, television, even 3D movies. So how did all this movement get started?



THE INVENTOR OF THE THAUMATROPE
JOHN AYRTON PARIS
1826

THAUMATROPE

At the very beginning – in the 19th century – was the **thaumatrope**. A thaumatrope is a stiff paper disc with pictures front and back. These pictures complement each other. The two sides of the thaumatrope are attached to a piece of string or to a thin stick.



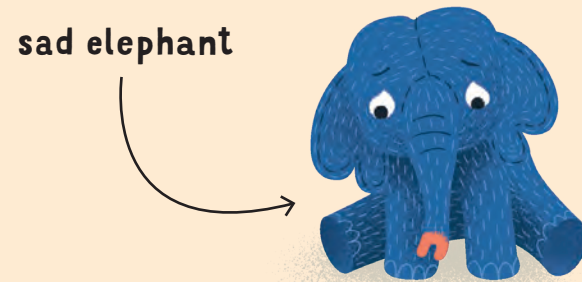
happy elephant



very happy elephant



very sad elephant



sad elephant

3. STAGING

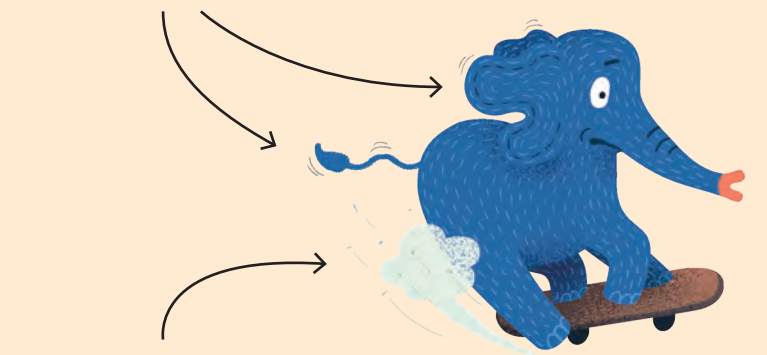
This is about what is going on. The rule is a very simple one. In every animated film, it must be absolutely clear who is the hero of the hour. So this hero is shown in all

their splendour, at every opportunity. This is to ensure that the audience focuses on what is most important.

4. STRAIGHT-AHEAD ACTION AND POSE TO POSE

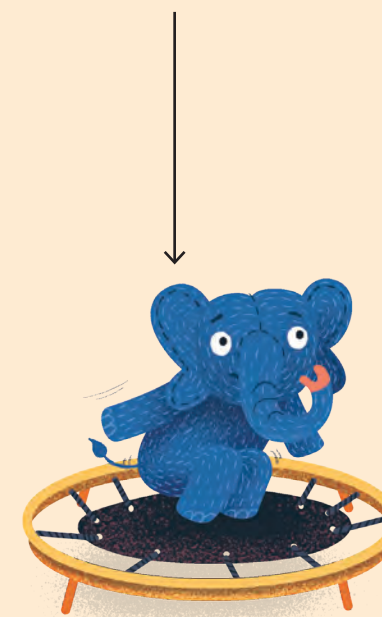
These are two different approaches to animation. You can go 'straight to the action' by patiently drawing each scene in order, one image after another, so getting a fluent animation that captures every change. Alternatively, you can add 'pose to pose', i.e. put together key movements and images without bothering with careful continuity; in this way, changes will be less fluent but more dramatic.

ears and tail flying behind



dust and gravel

normal ears



inert, standing ears



5. FOLLOW-THROUGH AND OVERLAPPING ACTION

Another fixed star of all Disney animations, and many others besides. This is the applied physics of animation. If a figure moves and then suddenly stops, its 'body' or a part of it continues to move for a moment before stopping completely. Some animated

figures – Jerry the mouse is a case in point – can be in full flight when deciding to stop abruptly, but instead of stopping they keep going. Jerry brakes with his feet, his ears and tail flying behind him, as if he is never going to stop. No movement stops simply.

PIXILATION

Animation here we come! Let's start with the easiest type, pixilation. In pixilation, the human figure is repeatedly posed. Technically, this is child's play: we photograph each small movement of a body or object, then we play these shots in rapid succession. As with the flip book, speed makes phased movement look connected and smooth.

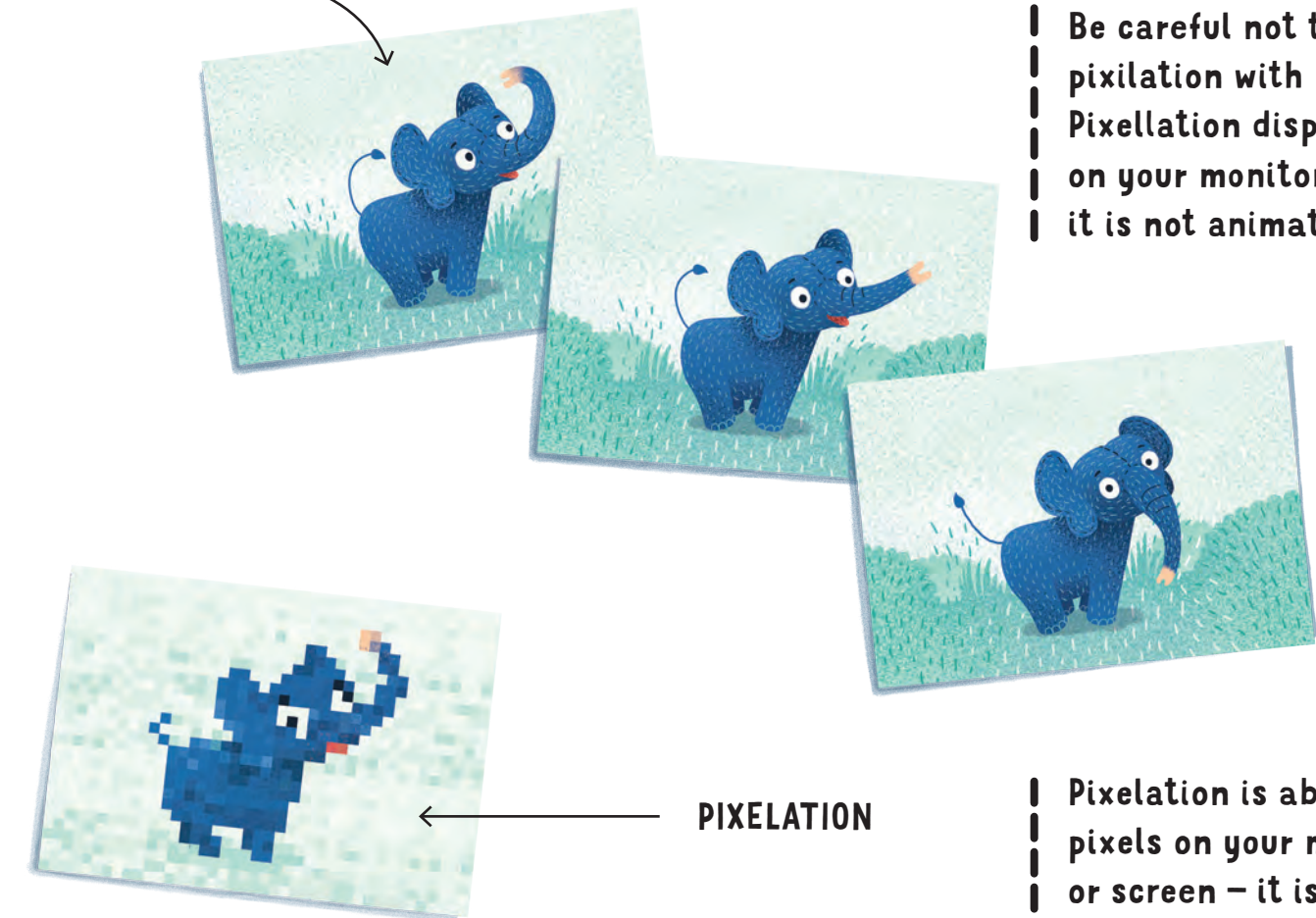
Pixilation demands a higher level of technology than a paper book, however. You will need a digital camera with a tripod, and a computer to play the photos back on.

If it's got people in it, isn't it a motion picture? Sort of. But with an animated film, you can get people to walk through walls.

Unlike a motion picture with live actors, which is shot in real time, a pixilated picture is filmed shot by shot, and the movements are slow and phased in a stop-motion animation technique. This allows you a lot of leeway in what you create. You can even become a superhero, without the need for the kind of special effects used in Iron Man, for instance.



PIXILATION



PIXILATION OR PIXELATION?
Be careful not to confuse pixilation with pixelation. Pixellation displays pixels on your monitor or screen – it is not animation.

Pixelation is about displaying pixels on your monitor or screen – it is not animation.

Which superpowers would you like? How about the ability to fly, or to walk through walls? How about teleportation? With pixilation, it's no problem to make you or your friend into a superhero!

In technical terms, it's about getting every small movement just right and capturing it in its own shot. A single second of film allows you to make up to twelve such changes; if you manage this, the movement will

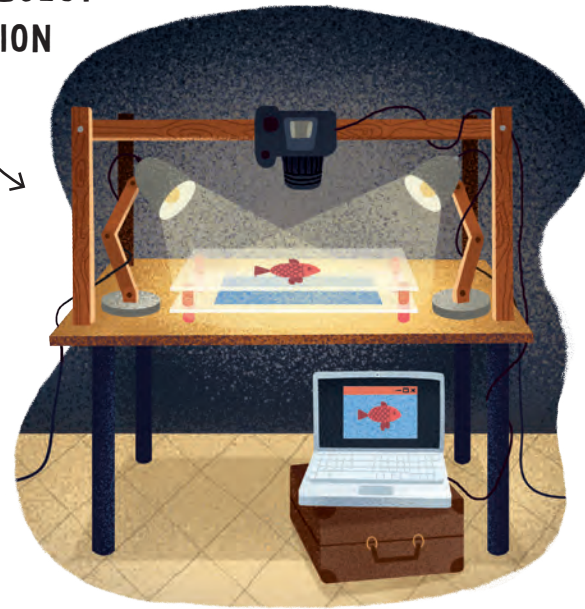
look nice and smooth. Once you have enough shots, you can play the film – by clicking on the photos in rapid succession. Because the changes from photo to photo are so slight, and thanks to physics and the imperfection of the human eye, we see the movement as fluent.

It may take an hour to make one minute of animated film action. With pixilation, movement isn't recorded, it is created bit by bit.

OBJECT ANIMATION

The very name 'object animation' gives us a good idea of what it is. The main actor in this type of animation is an object – often something that we use every day, like a shoe or a comb. As an object has a fixed, inflexible shape, object animation is obviously quite different from pixilation, which is based on human movement, and claymation, in which movements are made to a malleable puppet of plasticine clay. The magic of object animation is in getting seemingly immobile objects to move on their own. When a shoebrush starts dancing, the viewer gets a big surprise!

SET FOR OBJECT ANIMATION



Like pixilation and claymation, object animation is a stop-motion animation technique – meaning that movement is created frame by frame, little by little. Can you remember how this is done?

Before we get started on it, take a look around. Which object does your eye fall on first? A book? A toy car? A plastic figure? There are surely lots of things in your room. Choose one or two of them. Then imagine what these things might do at night, when the room is dark and you are asleep. Do they just stay there on the shelf, not moving? Or do they come to life and explore their surroundings? Does the toy soldier go for a chat with the plastic Red Indians? Does the cuddly elephant hide under the bed? Clear your desk and get your chosen object to move about on it.



SHOOTING FROM ABOVE



Backdrop for animation, painted as the animator chooses

Darken windows. Sources of light should illuminate the set only.

Lighting can come from multiple sources, as the animator sees fit.

glue, adhesive putty and sticky tape, pegs, pins and clips – all things good for attaching scenery

A big table

When working with a single scene, it is better not to move the camera on the tripod.

A computer for backing-up of camera shots and operation of an animation program

ANIMATED FILM



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HOW TO ANIMATE

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HIKADE

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