Full animation and limited animation are two approaches to creating animated content, each with its own distinct characteristics and applications.

1. **Full Animation**:
    - **Definition**: Full animation refers to a technique where each frame of the animation is created individually, resulting in smooth and fluid motion.
    - **Characteristics**:
        - High frame rate: Full animation typically operates at a high frame rate, often 24 frames per second or higher, to achieve smooth movement.
        - Detailed artwork: Characters and backgrounds in full animation tend to be highly detailed and elaborate, with intricate designs and shading.
        - Extensive movement: Full animation allows for a wide range of movement and expression, with characters able to move in a lifelike manner.
    - **Examples**: Disney classics like "Snow White and the Seven Dwarfs," "The Lion King," and "Frozen" are prime examples of full animation.
2. **Limited Animation**:
    - **Definition**: Limited animation is a technique where certain shortcuts are taken to reduce the number of frames needed, resulting in a more stylized and economical approach.
    - **Characteristics**:
        - Lower frame rate: Limited animation typically operates at a lower frame rate than full animation, often around 12 frames per second or lower.
        - Simplified artwork: Characters and backgrounds in limited animation are often simplified, with fewer details and less shading.
        - Restricted movement: Limited animation restricts movement to essential actions, with characters often moving in a more exaggerated or stylized manner.
    - **Examples**: Hanna-Barbera cartoons like "The Flintstones," "Scooby-Doo," and "The Jetsons" are known for their use of limited animation techniques.

Uses:

- Full animation is often used for feature films, where the highest quality and attention to detail are desired.
- Limited animation is frequently employed in television animation, commercials, and web animations, where budgets and time constraints may necessitate a more efficient approach.

Both approaches have their strengths and are chosen based on the specific requirements of the project, including budget, timeline, and artistic style.

Full Animation:

1. **Artistic Expression**: Full animation allows animators to fully express their artistic vision with detailed character designs, rich backgrounds, and smooth movement. This approach is well-suited for storytelling that requires intricate visuals and nuanced character performances.
2. **Time-Consuming**: Creating full animation can be time-consuming and labor-intensive. Each frame must be meticulously drawn or digitally created, which can result in longer production schedules and higher costs compared to limited animation.
3. **High Production Values**: Full animation is associated with high production values and is often used for prestigious projects such as feature films and high-end television productions. The emphasis on quality and craftsmanship is a hallmark of this approach.
4. **Emotional Impact**: The fluidity and realism of full animation can enhance the emotional impact of a story. Characters appear more lifelike, and their movements can convey subtle emotions and expressions, deepening the audience's connection to the narrative.

Limited Animation:

1. **Cost-Effective**: Limited animation is a more cost-effective approach compared to full animation. By reducing the number of frames and simplifying character designs, production time and expenses can be significantly reduced, making it a practical choice for projects with limited budgets.
2. **Distinctive Style**: Limited animation has a distinctive style characterized by stylized movement and simplified artwork. This aesthetic can be appealing in its own right and is often associated with classic cartoons and nostalgic television shows.
3. **Efficiency**: Limited animation is well-suited for projects that require quick turnaround times, such as television series and commercial advertisements. Its efficiency allows animators to produce content more rapidly without sacrificing visual appeal.
4. **Creative Constraints**: The limitations of limited animation can also inspire creativity. Animators must find inventive ways to convey movement and expression within the constraints of the technique, leading to innovative storytelling and visual solutions.

Full Animation:

1. **Flexibility in Character Design**: Full animation allows for greater flexibility in character design, as animators have more freedom to create intricate and detailed characters. This flexibility can result in visually stunning and memorable characters that resonate with audiences.
2. **Complex Movement and Action Sequences**: Full animation is well-suited for depicting complex movement and action sequences with fluidity and realism. This makes it ideal for scenes involving dynamic action, elaborate choreography, or subtle character interactions that require precise timing and movement.
3. **Emphasis on Realism**: Full animation often aims to create a sense of realism in movement and character behavior. Animators pay close attention to details such as weight, physics, and anatomy to make characters move convincingly within their animated worlds, enhancing the audience's immersion in the story.
4. **High Production Costs**: The high level of detail and craftsmanship involved in full animation typically results in higher production costs compared to limited animation. This can include expenses related to labor, equipment, and software tools required to create and render the animation.

Limited Animation:

1. **Distinctive Artistic Style**: Limited animation is known for its distinctive artistic style, characterized by simplified character designs, stylized movement, and minimalist backgrounds. This style can be visually striking and is often associated with certain genres or periods in animation history.
2. **Creative Use of Constraints**: Limited animation requires animators to work within creative constraints, such as a reduced number of frames or simplified character designs. However, these constraints can also inspire innovation and creativity, leading to unique visual storytelling techniques and artistic solutions.
3. **Cost-Effective Production**: Limited animation is a cost-effective production technique, making it suitable for projects with limited budgets or tight schedules. By streamlining the animation process and focusing on essential elements, producers can minimize production costs without compromising on visual quality.
4. **Effective for Expressive Storytelling**: Despite its limitations, limited animation can be highly effective for expressive storytelling. Animators can use stylized movement and visual cues to convey emotions, humor, and narrative themes in a way that resonates with audiences, creating memorable and engaging animated content.

In summary, both full animation and limited animation offer unique artistic and production advantages, catering to different storytelling needs, budgetary constraints, and creative visions. Whether it's the intricate detail and realism of full

animation or the stylized simplicity and cost-effectiveness of limited animation, each approach has its place in the world of animation and continues to inspire animators and audiences alike.

Full Animation Example:

- **Film**: "The Lion King" (1994) - Produced by Disney, "The Lion King" is a classic example of full animation. The film features highly detailed and lifelike characters, intricate backgrounds, and fluid movement throughout. Scenes such as the stampede sequence and the "Circle of Life" opening sequence showcase the technical prowess and attention to detail characteristic of full animation.

Limited Animation Example:

- **TV Series**: "The Flintstones" (1960-1966) - Created by Hanna-Barbera Productions, "The Flintstones" is an iconic example of limited animation. The show's animation style is characterized by simplified character designs, repetitive backgrounds, and limited frame counts. Despite these constraints, "The Flintstones" became a beloved animated series, known for its humor, charm, and distinctive visual style.

Comparison:

- In "The Lion King," the characters exhibit smooth, naturalistic movement, with intricate details in their designs and lifelike expressions. The animation captures the grandeur and realism of the African savanna, showcasing the capabilities of full animation in creating immersive and visually stunning worlds.
- On the other hand, "The Flintstones" employs limited animation techniques to create its signature Stone Age setting. Characters move with a more restricted range of motion, and backgrounds are often static or minimally animated. However, the show compensates for these limitations with clever writing, vibrant characters, and creative use of limited animation to convey humor and storytelling.

These examples highlight the distinct visual styles and production approaches of full animation and limited animation. While full animation prioritizes detail, fluidity, and realism, limited animation focuses on simplicity, efficiency, and stylized storytelling. Both techniques have their

strengths and are suited to different types of projects and storytelling goals.

Stop animation:

Stop motion animation explained: definition, types and techniques.

Stop motion animation is a simple yet effective way to bring the everyday to life. Clever camera tricks and an eye for the minute details combine to create captivating moving images. Find out more about the history of stop motion and the techniques used to capture the magic.

Types of stop motion animation.

Object motion.
No budget? No problem - grab whatever's handy and bring it to life.
Examples: The Humpty Dumpty Circus (1898)
Claymation.
Sculpt characters and props from modelling clay to create strange new worlds.
Examples: Morph, Wallace & Gromit

Pixilation.
Bring live actors into the mix - and prepare to hold that pose for still photography.
Examples: Hôtel électrique (1908)

Cutout-Motion.
Craft your cast and their surroundings from paper and shoot top down in two dimensions.
Examples: The Spirit of Christmas (Matte Stone and Trey Parker)

Puppet Animation.
Push the aesthetics of your project even further and create sophisticated puppets to pose in the frame.
Examples: Coraline, Kubo and the Two Strings

Silhouette Animation.
Add a backlight to your cut-outs and bring secretive shadow-play into the

mix.
Examples: The Adventures of Prince Achmed (1926), Papageno (1935)

History of stop motion animation.

The proliferation of ‘snap-it-and-forget-it’ via digital cameras and smartphones has brought the potential for stop motion into households across the world, but as the 20th century dawned the art form was reserved for those with the budget and time to painstakingly produce it.

Beginning with what’s thought to be the very first entry in the genre, ***The Humpty Dumpty Circus*** was released in 1898. Creators **J. Stuart Blackton and Albert E. Smith** used a variety of children’s toys - long before Woody and Buzz arrived on the animated scene - to depict the hidden lives of circus performers.

Wladyslaw Starewicz was another pioneer of the form, producing a series of works throughout the 1910s and 1920s, most notably ***Lucanas Cervus***. The title, from the Latin for ‘stag beetle’, used a variety of wee beasties which Starewicz had taxidermised into an all-star cast. The results shocked audiences into thinking the animator had trained them to wander about on hind legs, carrying household objects around as these characters do.

Willis O’Brien was the mastermind behind the animation for the cinematic icon King Kong in his 1933 big screen adventure - but O’Brien mastered the trade for a film released in 1925 called ***The Lost World***. Based on the Arthur Conan Doyle novel of the same name, the film depicts a cast of explorers in search of a band of dinosaurs which still roam the earth, mixing mind-blowing effects and some clever film editing.

How to make a stop motion animation.

Unlike the pioneers of the form, you won’t need access to expensive equipment to mount your own stop motion video production.
What you’ll need for stop motion animation.

To get started on creating your own mini masterpieces you’ll need:

- **Digital camera**. Even a smartphone camera will do - obviously the higher in quality, the better.
- **Stand/mount**. An essential part of the operation, you’ll need to mount the camera so it remains perfectly still throughout the production process. Luckily these aren’t expensive.

- **Editing software**. Again, your phone will do in a pinch - but you'll need video editing software that can sequence your images and transfer the results as a whole file.
- **Objects to film**. Whether you're crafting intricate backdrops a la Reiniger or simply making household objects come to life, grab a few props and start shooting.

How to shoot in stop-motion.

Although the process is pretty simple, there are several things to watch out for so you can shoot comfortably and be assured of the best results possible.

1. **Firmly frame your subject.** Make sure you're shooting at an angle that fits your subjects without letting in anything you don't want to include. Objects wandering in or around the edge of a shot will affect the final product.
2. **Adjust the lighting.** Shoot where the light is completely under your control - for example, under a desk light if you're shooting two-dimensional objects. Changes to lighting over time will create an inconsistency to your levels as the shoot goes on on.
3. **Steady your shots.** Once your camera is set up, if at all possible, don't touch it again until your sequence is finished. Use a remote or a timer to snap each frame of the sequence, before resetting for a new angle or scene.
4. **Decide on your frame rate.** How long do you want to keep a single image in shot? At 24 frames per second, you'll need 24 images - whether that's fewer different images during slow moments or up to 24 different frames to illustrate faster movements.
5. **Edit.** Move images into a sequencer and edit on the fly or dump the whole lot at the end of the shoot. Then you can go to town on things like fast vs slow motion and any accompanying sound or music.

Stop motion animation techniques.

Given the relatively simple way that stop motion animation is created, it's the animators' own ways of working with their chosen subjects that spark joy on the screen. The emergence of different styles of stop motion

breathes new life into the technique as a whole throughout cinematic history.

- Object motion breathes life into everyday objects - that is, nothing that the artist needs to create from scratch themselves. The Humpty Dumpty Circus is thought to be the first living example of object motion, although the stars of the show were animal toys - they weren't specifically created for the project.
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- Claymation involves the sculpture and frame-by-frame manipulation of clay-based characters or objects. The most famous examples of this technique are cheese-loving, multi-Oscar-winning duo **Wallace & Gromit** along with other projects from Aardman Animations and the Stateside seasonal specials traditionally produced by Rankin/Bass.
- **Pixilation** applies the same technique to humans, who presumably suffer sore muscles after each shoot as they're tasked with making only minute movements between frames. One example of pixilation which made waves in the British music scene was the music video by The Maccabees, to accompany their song '**Latchmere**'.
- **Cutout-Motion** means taking two-dimensional objects (usually from paper) and animating their movements. The pilot episode of foul-mouthed phenomenon **South Park** was created in cutout-motion, a laborious process which co-creator Matte Stone described as "hell on this earth" - and which thankfully they've developed on into a system they find more comfortable.
- **Puppet Animation** is another specific stop motion creation, involving the crafting and manipulation of puppets to produce a certain charming kind of animated

aesthetic. It's most famously used in the work of Laika, the studio behind cinematic successes **Coraline** and **Kubo and the Two Strings**.

- **Silhouette Animation** combines the use of cutout-motion and clever shadow play to produce fascinating frames of action. Pioneered by European studios during the 1920s, it's perhaps most famously used in the work of Lotte Reiniger, whose prolific career included more than 70 silhouette animation films retelling old folk tales.

What do you need for stop motion animation?

Household technology has advanced to such a point that stop motion animation is well within any amateur animator's grasp. A smartphone camera and a sturdy stand are all you need to shoot frames. You'll also benefit from a consistent light source and a selection of props to animate. You'll also need discipline and plenty of patience - shooting your frames takes time and many minute adjustments to the set.

What are the four types of stop motion animation?

There are six main types of stop motion. Object-Motion is the art of moving or animating found objects, while claymation involves sculpting characters from clay. Pixilation uses people and cutout-motion makes the most of moving paper and other 2D materials. Puppet animation involves crafting puppets, while silhouette animation shares traits with cutout-motion and adds shadowy effects.

How many pictures does it take to make a one-minute stop motion?

Working to roughly 24 frames per second - the standard for films and TV - you would need to produce 1440 frames for a one-minute stop motion animation. That's not to say each frame needs to be unique - common practice is to shoot in 'twos' and 'threes', doubling or even tripling up on frames when characters are moving at a more normal pace. Single different frames are used to capture faster movements.

bject-Motion

Can be called Object Animation as well, and it's simply the moving of objects per frame. You're unlimited with what you can do here, because you get to create stories using any and all of the objects around you.

Object animation is a type of stop-motion animation in which undrawn objects that are not fully malleable, such as toys, blocks, puppets, clay (clay) or wax, are not designed to be animated. including movement. Look like a recognizable human or animal character. Object animation is considered a different form of animation than model animation or puppet animation. These two forms of stop-motion animation generally use a recognizable character as the subject rather than a pre-existing object such as a static toy soldier or construction toy. Tinkertoys, LEGO branded bricks (similar to Brickfilm), Lincoln Logs, Erector sets, Playmobil, and similar preformed objects. Object animation is often combined with other forms of animation for a more realistic effect. Add more complexity and depth to your object animations with model animation or puppet animation. For example, toy cars are animated, in which the character can clearly be seen driving the car, but they are often animated. The use of animated objects in movies has been around since the early days of cinema. An example of modern object animation can be seen in the Robot Chicken, part of Cartoon Network's regular Adult Swim block. This is a combination of object animation and puppet variation. Or model animation. In this case, the doll is made to resemble a plastic or action figure.

Object animation refers to the technique of animating inanimate objects to create the illusion of movement and life. Instead of characters or creatures, the focus is on animating everyday objects, mechanical devices, or non-living things. Object animation can range from simple movements like rotating or bouncing to more complex actions involving interactions between multiple objects.

Here are some key aspects of object animation:

1. **Purpose**: Object animation can serve various purposes, including educational demonstrations, product advertisements, storytelling, or artistic expression. By animating objects, animators can bring them to life, convey messages, or create engaging visual effects.
2. **Techniques**:
    - **Stop Motion**: This technique involves physically manipulating objects frame by frame and capturing them with a camera to create the illusion of movement. It's often used for claymation, puppetry, or object manipulation with physical props.
    - **Computer Animation**: Objects can also be animated digitally using computer software. This allows for more precise control over movements, transformations, and interactions between objects.

Techniques like keyframe animation, rigging, and physics simulations are commonly used in computer-generated object animation.

3. **Examples**:
    - **Stop Motion**: "Wallace and Gromit" series by Aardman Animations features claymation characters interacting with various objects and inventions.
    - **Computer Animation**: Animated advertisements often showcase object animation to demonstrate the functionality or features of products. For example, a smartphone advertisement might animate the device to showcase its capabilities or highlight its design.
4. **Creativity and Storytelling**: Object animation offers unique opportunities for creativity and storytelling. By imbuing objects with personality or creating imaginative scenarios, animators can captivate audiences and convey messages in unexpected ways.
5. **Challenges**:
    - **Realism**: Creating convincing object animation requires attention to detail and understanding of real-world physics. Objects should move in a natural and believable manner to maintain immersion.
    - **Technical Skill**: Object animation, especially in computer-generated form, requires technical proficiency in animation software, rigging, and physics simulations.
    - **Patience and Precision**: Like all animation, object animation demands patience and precision, especially in techniques like stop motion where movements are created frame by frame.

Overall, object animation is a versatile and engaging form of animation that offers unique opportunities for creativity and storytelling. Whether used for educational purposes, advertising, or entertainment, animating objects can captivate audiences and convey messages in memorable and impactful ways.

6. **Advertising and Marketing**: Object animation is commonly used in advertising and marketing campaigns to showcase products or convey brand messages. By animating objects, advertisers can highlight product features, demonstrate functionality, and create memorable visual experiences that engage audiences. For example, animated food products can be showcased in commercials to highlight their freshness and appeal.
7. **Educational Content**: Object animation is often utilized in educational content to explain complex concepts or demonstrate scientific principles in an engaging and accessible manner. By animating objects such as diagrams, charts, or models,

educators can make abstract ideas more tangible and easier to understand for learners of all ages. Animated educational videos are particularly popular on platforms like YouTube and educational websites.

8. **Experimental and Artistic Expression**: Object animation offers a platform for experimentation and artistic expression, allowing animators to push the boundaries of creativity and explore unconventional storytelling techniques. Artists may use object animation to create abstract visual experiences, surreal narratives, or experimental short films that challenge traditional notions of animation and storytelling.
9. **Integration with Live Action**: Object animation can be seamlessly integrated with live-action footage to create visually compelling scenes that blend reality with fantasy. This technique, known as visual effects (VFX) or compositing, allows animators to insert animated objects into live-action environments, interacting with real actors and surroundings. This integration is commonly seen in films, television shows, and commercials to create magical or fantastical elements within live-action settings.
10. **Cultural and Historical Significance**: Object animation has a rich cultural and historical significance, with roots in traditional animation techniques such as puppetry, shadow play, and mechanical devices like zoetropes and thaumatropes. Throughout history, object animation has been used to entertain audiences, convey cultural narratives, and preserve folk traditions. Today, modern animators continue to draw inspiration from these historical techniques while pushing the boundaries of innovation in object animation.

In summary, object animation is a versatile and dynamic form of animation that finds applications across various industries, from advertising and education to experimental art and entertainment. Its ability to bring inanimate objects to life opens up endless possibilities for storytelling, creativity, and visual expression.

1. **Advertising Example**:
    - **Product Advertisement**: Imagine a commercial for a kitchen appliance, such as a blender. In the advertisement, the blender is anthropomorphized, given eyes, a mouth, and arms. The blender "comes to life" and demonstrates its features by blending various fruits and vegetables into a smoothie. The animated blender interacts with other animated objects, such as fruits and ice cubes, to showcase its functionality and appeal to the audience.
2. **Educational Example**:
    - **Science Explanation Video**: Consider an animated video explaining the water cycle. In the video, animated objects such as clouds, raindrops, rivers, and trees are used to represent different elements of the water cycle. Through object animation, viewers can visually understand how water evaporates from the ocean, forms clouds, precipitates as rain, and flows back into rivers, lakes, and oceans. The animated objects help simplify a complex scientific concept and make it more accessible to learners of all ages.

3. **Artistic Expression Example**:
    - **Stop Motion Short Film**: "Fresh Guacamole" is a stop-motion animated short film by filmmaker PES. In the film, everyday objects such as grenades, baseballs, and dice are creatively transformed into ingredients for making guacamole. Through meticulous object animation, the filmmaker brings these seemingly unrelated objects together to illustrate the process of making guacamole in a visually inventive and whimsical way. "Fresh Guacamole" demonstrates how object animation can be used as a form of artistic expression to create imaginative and surreal narratives.
4. **Integration with Live Action Example**:
    - **Film Scene**: In the film "Who Framed Roger Rabbit," directed by Robert Zemeckis, object animation is seamlessly integrated with live-action footage. In one scene, the animated character Roger Rabbit interacts with various real-world objects and characters, such as grabbing onto a real-life telephone receiver or hiding behind a live-action prop. The integration of animated and live-action elements in "Who Framed Roger Rabbit" blurs the lines between reality and fantasy, creating a visually captivating and immersive cinematic experience.

These examples illustrate how object animation can be used in various contexts, from advertising and education to artistic expression and filmmaking. By animating inanimate objects, creators can engage audiences, convey messages, and tell compelling stories in innovative and visually striking ways.

Pixilation:

Pixilation is a stop motion technique in which live actors are used as a frame-by-frame subject in an animated film, by repeatedly posing while one or more frame is taken and changing pose slightly before the next frame or frames. The actor becomes a kind of living stop-motion puppet.

Why is it called “pixilation?”

The name seems to come from the word “pixilated,” which itself is a reference to someone being under the influence of pixies (yes, the small magical flying ones). Due to pixilation often representing human beings seemingly moving around on their own, it makes some amount of sense.

Stop-Motion vs Pixilation

No doubt pixilation will remind you of stop-motion animation, and that’s mainly because they’re almost the same thing. The key difference is that stop-motion animation involves models, along with sets, that are 100% manipulated by a director/animator.

Compare with pixilation, where a human being and their surroundings are manipulated, but that's all. In both cases, everything is shot frame-by-frame.

Characteristics of Pixilation include:

- Frame-by-frame filmmaking process
- Jerky and unnatural looking movement
- Surreal and fantastical subject matter
- Due to the laborious process, short films and music videos are where this style is usually found
- Usually only reserved for specific moments and VFX shots in full-length movies