https://doi.org/10.22398/2525-2828.82450-63

# Review of animation and live-action cinema: similarities and differences[1]

## *Avaliação sobre Animação e Cinema de vida real: semelhanças e diferenças*

Eliane Muniz Gordeeff[I]


## ABSTRACT

This article aimed to present a survey on the similarities and inconsistencies between an animated work and one made in live-action. The article considered relevant questions about the characteristics of Animation and the direct photographic capture of images (in live-action), which challenge the canons of Film Studies: presenting movement as a fundamental element of Animation and not of Live-Action Cinema. Animated techniques and their differences were also analyzed, as well as the relationship between Animation and photorealistic image (according to Roland Barthes, André Bazin, and Edgar Morin), considering the sense of illusion. The studies of Edmond Couchot and Jean Baudrillard are fundamental for the analysis of Audiovisual simulation, as well as the works of Christian Metz and Jacques Aumont, for the evaluations of verisimilitude, the impression of reality and the suspension of disbelief, for these two types of images. The sense of "fiction" of the naturalistic and connotative images is also evaluated, both by Animation and Live-action Cinema, also considering the studies of Norman McLaren and Andrei Tarkovsky. In the end, the article concludes that the animated image is more untrue than the filmed image, always linked to the sense of everyday materiality. It evaluates the way of obtaining both images, the power of Animation, and the historical contradiction of the photorealistic image of what is known as 3D Animation. The text also ends with a summary of the entire analytical process through a framework of the characteristics of the animated and filmed images.


**Keywords:** Animated image. Filmed image. Moving image. Animated techniques. Digital image.


## *RESUMO*

*O objetivo deste artigo é apresentar um levantamento sobre as similaridades e incongruências entre uma obra animada e uma realizada em live-action. No artigo, são consideradas questões relevantes sobre as características da animação e da captura fotográfica direta das imagens (no live-action) que contestam os cânones dos Film Studies: o movimento como elemento fundamental da Animação, e não do Cinema Live-Action. Também são analisadas as técnicas animadas e suas diferenças, a relação da animação com a imagem fotorrealista (segundo Roland Barthes, André Bazin e Edgar Morin), considerando o sentido de ilusão. Os estudos de Edmond Couchot e Jean Baudrillard são basilares para as análises sobre a simulação no Audiovisual, assim como os trabalhos de Christian Metz e Jacques Aumont para as avaliações sobre a verossimilhança, a impressão da realidade e a suspensão da descrença, para esses dois tipos de imagens. Ainda são avaliados o sentido de "ficção" das imagens naturalista e conotativa, tanto pela Animação como pelo Cinema Live-Action, observando também os estudos de Norman McLaren e Andrei Tarkovski. Ao final, o artigo conclui que a imagem animada é mais falsa do que a imagem filmada, sempre ligada ao sentido da materialidade cotidiana. Avaliando a forma de se obter uma e outra imagem, a potência da Animação e a contradição histórica da imagem fotorrealista ligada à conhecida como Animação 3D. O texto também finaliza com um resumo de todo o processo analítico, por meio de um enquadramento das características das imagens animadas e filmadas.*


***Palavras-chave:*** *Imagem animada. Imagem filmada. Imagem em movimento. Técnicas animadas. Imagem digital.*

1 This evaluation was literally fundamental for the thesis (and is a part of it) *The Representation of the Diegetic Imaginarium in Animation in Live-Action Cinema* (2018) — with the guidance of Prof. Dr. João Paulo Queiroz, from the School of Fine Arts of the University of Lisbon, in Portugal, with a scholarship from CNPq/Brazil, and from the University of Lisbon (European mobility program Erasmus+, at Université Paris 8 Vincennes-Saint-Denis /France) — where the relationship between animated and filmed images was studied in a live-action production. The text of this article was also published for the first time in English, at CONFIA 2016, 4th International Conference on Illustration and Animation, in Barcelos, Portugal, with the title "*The creation of the animated and filmed images*".

[I]Universidade de Lisboa, Faculdade de Belas-Artes, Centro de Investigação e de Estudos em Belas-Artes – Lisboa, Portugal. E-mail: eligordeeff@gmail.com

**Received on:** 10/06/2023. **Accepted on:** 08/29/2023

## INTRODUCTION[2]

Animation is an art form that has developed and expanded its field of activity over time. It is currently used in several areas, such as Media, Education, Engineering, and Computing, among others. However, when images, whether filmed or animated, merge completely, with no noticeable differences in production methods for Cinema, it is important to analyze the diverse and divergent aspects between these two ways of creating moving images. The objective of this article was to understand more explicitly its possibilities and visual results (mixed or not), once that, although they are not the same, Animation and Live-Action Cinema, despite sharing the same medium (Audiovisual), run the risk of losing their individuality traits in image creation, both being considered as just "Cinema". Many often mistakenly consider Animation as nothing more than a "Cinema" genre (DENIS, 2007, p. 7).

Yes, nowadays, both support digital file formats. Sébastien Denis (2007, p. 7) states that "animated cinema is, first and foremost, cinema" while Manovich (2001, p. 295) observes that, "as cinema enters the digital age [...]. Consequently, cinema can no longer be clearly distinguished from animation." However, it is understood that although results may be coded in the same way, this does not mean that the processes or technical characteristics are exactly the same. Furthermore, it must be considered that Denis points out the potential of Animated Cinema as equal to that of Live-Action Cinema and that Manovich (2001, p. 295) states that the meaning of reality, the photorealism of animation/3D effects and filmed images, is the same; while "the manual construction of images in digital cinema represents a return to the pre-cinematic practice of the 19th century, when images were painted and animated by hand"[3]. None of them claim that Animation and Live-Action Cinema are the same thing. However, they are part of the industry known as "Cinema", and it is precisely Cinema productions that this article focuses on.

To this end, Animation is analyzed as a set of ways of creating images through various animated techniques, observing their formal, visual, technical, and representation characteristics, and making a comparison with filmed images (Live-Action Cinema), which by convention are considered antagonistic — real image (shot) *versus* animated image. However, other differences are also observed.

The study aimed to analyze the various divergent aspects between these two ways of creating moving images in order to obtain a comprehensive understanding of their possibilities and understand what they result in. To this end, aspects of integrity, reproduction, aura, representation, fiction, and virtuality of the image are explored, considering several works, such as those by André Bazin, Christian Metz, Edgar Morin, Jacques Aumont, Edmond Couchot, Roland Barthes, Norman McLaren, and Andrei Tarkovsky.

The methodology that guided this analysis refers to Animation as a way of creating images, as a technical-creative process.

2 All quotations were freely translated by the author, except for English originals.

3 Alan Cholodenko (2007, p. 41) also comments on animation being ignored, for a long time, by Film Studies.

## HISTORICAL ISSUES AND RELEVANT CHARACTERISTICS

Animation is an art form that predates what we know as Cinema. Its origins date back to the optical studies of Joseph Plateau (WILLOUGHBY, 2009) in the 19th century. As Dominique Willoughby (2009) observed, it was a scientific, technical, and aesthetic creation. While Painting was dedicated to illusionistic visual representation by creating images with paint on a surface (canvas, wall); Sculpture, by sculpting materials; and Engraving and Drawing created images through lines on a surface, Animation emerged as a more complex form of image creation, with the fundamental difference of being moving images.

In fact, animation is an optical illusion[4]: movements do not actually occur but are "visible" when interpreted by the optical system, of the human brain. The static images of a character, with some variations, are interpreted in succession and perceived as if they were in motion.

At the time, this creation was considered merely a curiosity: an optical study that became a form of mass entertainment (with the advent of French *cafés* and American Vaudevilles[5]). The nature of the image was very different from what existed until then (static images, as in Engraving and Painting). Unsurprisingly, futurists considered moving images a kind of artistic avant-garde, like Impressionism and Cubism (LESLIE, 2004), reflecting the productive urban existence and kinetic machines of Modernity. And, in a way, indeed, they were.

The ability to effectively create animations arises when humans understand how to deceive their own vision, through the segmented representation of movement. Two important topics played a fundamental role in creating the animations: illusion and the division of movement into multiple images. Live-Action Cinema emerged later as the result of the development of these two topics, with advances in theatrical staging and Photography. That resulted in capturing images of a scenario directly onto a sensitive support surface (film).

Therefore, although several renowned theorists claim that the fundamental element of Cinema is movement (METZ, 1972; IRZYKOWSKI, 2008), observing some of the fundamental characteristics of these two forms of image creation is crucial. Live-Action Cinema does not create movement, but captures it — the movements are real, as are the actors and the elements of the scene (mostly). When the film is projected at speed, the illusion of movement is created, like when screening an animated film.

Another art form that creates movement and places it as its cornerstone is Dance[6]. Movement is also the cornerstone of Animation, making it what it is, but animation itself only creates the illusion of movement. Another evidence of the importance of movement in Animation is the fact that codes were established to

4 Phy Effect and Retinal Resistance (AUMONT, 2001).

5 "A type of variety theater, where the public could drink and chat, with its origins in curiosity halls" (MASCARELLO, 2006, p. 20).

6 Just like other Arts whose basis is movement: Mime, Performance.

create it: the "Fundamental Principles of Animation" [7] developed by Walt Disney. Likewise, Cinema presents specific taxonomies for different types of montages, raccords, and cuts (AUMONT, 2008). Therefore, it is more coherent to say that what sets Cinema apart is the *montage*[8]. The Koulechov effect (2008) contains the spark of the entire understanding of narrative films, including raccords, the succession of shots, cuts, and any editing work, that is, cinematographic language itself. This language was developed over time with technological advances, such as smaller and more flexible cameras, moving cameras, cranes, editing equipment, etc.

Much of the "language" was also "absorbed" by the animators, who already used it instinctively and naturally, as in the basic sequence of comic books. However, without the taxonomy or awareness of film construction. This subsequent understanding allowed the industrialization and standardization of audiovisual production.

## CONSTRUCTION OF ANIMATED IMAGE AND FILMED IMAGE AND THEIR VISUALITIES

The construction of an image in Animation and Live-Action Cinema are very different. In general, Cinema obtains its images by capturing a real scene, which can be a performance with actors and scene elements following a script. However, the scene unfolds like a theatrical farce on a stage. Since the image results from photographic capture, cinema "demands" its connection with reality, regardless of the absurd representation. Simply put, it is impossible to separate the element of reality that the photographic image absorbs (BARTHES, 1984). The actor's presence and movements create the impression of reality as the scene develops (BAZIN, 1991), generating empathy and similarity with the material world. Witnessing history happening before our eyes turns the screen into a window, as Bazin (1967) argues, allowing us to play the role of *voyeur*.

On the other hand, in Animation, there are several ways to build images, depending on the technique used. That may include Cartoon (drawing on any type of support, including Rotoscoping, drawing/painting on film and 2D — digital drawing); Stop Motion (using sand, modeling clay, dolls, objects, cutouts, painting on glass, pixilation, pin screen or strata-cut); or 3D Animation, through three-dimensional computer graphics.

The verb "build" is used because, in reality, everything is built from nothing (drawing is also a form of construction): sets, scene elements, props, and characters. While in Cinema, characters are "incarnated" by actors who need to be characterized and "play their role" (Dramatic Art), in Animation, they are drawn, painted, sculpted, cut, constructed, or modeled to "embody" the characters' personality traits and design.

7 Which were developed and disseminated by Walt Disney and his collaborators but had already been conceptualized in books and periodicals from the 1920s (CRAFTON,1993).

8 "Montage is the principle that governs the organization of visual and sound filmic elements, or groups of such elements, juxtaposing them, linking them and/or organizing their duration" (this is the "expanded definition of montage", by Aumont (2008, p.62).

It is worth mentioning that pixilation is a particular case, as it also involves actors and, among all animated techniques, it is the one that most resemble the look of a live-action film, working with real-world dimensions and all production apparatuses, such as clothing, makeup, scenery, and lighting. However, the actors have no autonomy and are manipulated like puppets. Each technique has its own specific characteristics.

## Cartoons (Animated Drawings)

This technique results from a succession of drawings in which positions are slightly modified to create the illusion of movement. As in any drawing, this technique records the animators' work, their own movement (GRAÇA, 2006). Drawings are photographed or digitized to create film-like continuity, usually at a rate of 24 to 30 drawings per second. If the work is drawn directly on a digital tablet[9], it is considered a computer file (thus called *2D Animation*[10]). If the drawings are made directly on the film[11], this is in turn, the record of the work itself (the so-called *Animation Without a Camera*). In *Rotoscopy*[12], the drawings are made based on a previously filmed image.

In Cartoons, the line determines the shapes and delimits areas, creating objects, backgrounds, props, and characters based on basic concepts of "figure and background" (ARNHEIM, 2009). By recognizing what you see (and what you already know), it is possible to identify the lines and stains as "something." This technique is fluid and flexible in nature, allowing for quick and easy adaptation and transformation. The choice of color influences the emotional impact and energizes the shapes (ARNHEIM, 2009). Although it is a basic technique — in general, animators learn animation by drawing — it is very rich in possibilities. The line works in the X and Y (two-dimensional) planes, but, since the Renaissance, it has been possible to create the illusion of three-dimensionality — this being the paradox of the two-dimensional image (AUMONT, 2001). It is also possible to simulate the impression of three-dimensionality, for example, by applying layers in the working process of the animated image, like the famous multi-plane camera from Disney studios (FURNISS, 2008)[13].

## Stop Motion

This technique does not classify as a cartoon but rather as an animated film. It does not leave paper records or editable digital files (as with 2D Animation), but

9 For example: *Thought of You* (2011), by Ryan Woodward. https://vimeo.com/14803194.

10 Generally, it works like a hybrid of cut-out animation and a cartoon: the character's body is created in sets that are joined along the axes of the body, like a paper "puppet". This then moves via the timeline motion controls in the animation software.

11 As an example, the short *Two Sisters* (1991), by Caroline Leaf: https://www.nfb.ca/film/two_sisters.

12 Like *Waltz With Bashir* (2008), by Ari Folman. Trailer: https://vimeo.com/24745755.

13 Positioning characters and backgrounds on different layers. The same principle was also used by Oskar Fischinger (1900-1967), in *Optical Poem* (1937), allowing the inclusion of depth of field in the two-dimensional image.

photographic images captured frame by frame[14]. It can be considered an "active" technique, as it involves an "autophagic" animation process, in which after each image capture, the scene is modified to create the next one, leaving only the last image at the end[15]. Animations with sand, cutting, painting, or modeling clay on glass are generally produced on a table with layers of glass, where the image is photographed from the top position over the image plane.

Animations with puppets, objects, and pixilation are physically three-dimensional and require the same care as a live-action film, adapted to the scale of the production, such as lighting, photography, scenery, and, in the case of puppets and pixilation, costumes. The film's set, as do the puppets themselves, need to be built. Although it is an industrial production[16], it always involves an element of artisanal work, such as sculpting, modeling, and sewing, to create a small-scale fictional world.

In Stop Motion, in the case of *Sand Animation*[17] and *Glass Painting*[18], images are more fluid, transparent, and with relief, resembling a painting in which the materials are sensitive to the animator's touch, and the lines and stains mix. Working with these techniques involves considering the layers of work to be illuminated to give depth to the image, making light a fundamental element, not only to highlight the image but also to allow the perception of another important characteristic: texture.

Cut-out animation[19], typically made of paper, can be folded, torn or cut despite the lack of flexibility. That offers other paths and means for artistic, technical, and aesthetic achievement, as seen in Garri Bardin's *Adagio* (2000)[20].

Puppet Animation has the appearance of a theatrical performance, a puppet theater without manipulators, in which they behave as if they were alive and were the characters themselves[21]. There is a seduction involved in this animated image, as movement grants the dolls a sense of reality and credibility, like the fulfillment of children's (and some adults') fantasies, allowing them to see what was previously just a fantasy with their eyes.

Object Animation, like pixilation, despite incorporating elements from the real world, such as filmed images, can create deeply provocative images, as in *Street of Crocodilles*[22] (1986), by the Quay Brothers, or surrealistic ones, as in *Luminaris*[23] (2011), by Juan Pablo Zaramella.

14 Which can be manipulated one by one digitally.

15 Light Animation is not considered a type of stop motion, as there is no "stop-motion" movement but rather one that is captured with a time-lapse camera.

16 As in the production of *Coraline* (2009), by Henry Selick, in which the characters' mouths were physically modeled on a 3D digital printer, based on a handmade model (GRUNEWALD, 2014).

17 For example: *The Owl Who Married a Goose: An Eskimo Legend* (1974), by Caroline Leaf: https://www.nfb.ca/film/owl_who_married_goose/.

18 For example: Black Soul (2000), by Martine Chartrand: https://www.nfb.ca/film/black_soul.

19 For example: Fado Lusitano (1995), by Abi Feijó: https://www.youtube.com/watch?v=7llQkTrcmAI.

20 This is a short film made with paper dolls, like animated origami: https://vimeo.com/157777379.

21 For example: *Tchaikovsky An Elegy* (2011), by Barry Purves: https://vimeo.com/80935923.

22 https://vimeo.com/13348494.

23 https://vimeo.com/24051768.

On the other hand, the pin screen[24] works with the shadows created by the heights of moving pins at the base of a screen. The visual effect is similar to that created with sand, but the movements are even smoother and more fluid, resembling smoke, a kind of "animated engraving." By pushing and pulling the pins in a particular way, the image is "engraved" onto the screen by the shadows created by the movement of the pins.

Strata-cut, in turn, is the Stop Motion technique that requires more careful preparation on the part of the animator. It develops through successive photos obtained from cutting material, such as a fruit, or it can be extremely sophisticated, as shown by the mass modeling work in *ABC*[25] (1988), by David Daniels, for the film *MoonWalker* (1988), by Jerry Kramer. Its images result from the internal organization of the colors of modeling clay obtained by slicing the block of dough.

## 3D Animation

*3D Animation* creates environments, objects, and characters modeled in a virtual computer environment with X, Y, and Z axes, using vector structures, just as in *2D Animation*. It is a combination of construction, modeling, and sculpting that involves the creation of structures by manipulating simple pre-designed software elements, such as circles and cubes, or using drawing tools, resulting in a new structure, be it an object, environment, or character. Images are applied to the surface of these elements to add color, to define shapes and textures, using what are called "materials", which can have different characteristics, such as brightness, reflection, transparency, etc. Movement control is carried out through a timeline, similar to editing software. Furthermore, through scripts and plug-ins[26], it is possible to automate movements and create various effects, including crowds (BECK, 2004), as seen in productions such as *Harry Potter and the Deathly Hallows: Part 1* (2010), directed by David Yates.

In *The Revenant*[27] (2015), directed by Alejandro G. Iñárritu, the visual "reality" potential of 3D Animation is impressive, making it difficult to differentiate, just by observation, what was filmed from what was animated. Furthermore, 3D offers the ability to achieve different visual effects, as seen in The Tale of the Three Brothers[28] scene in the same Harry Potter film.

It is essential to highlight that 3D Animation has several distinct characteristics concerning the previously mentioned animation methods. One of them is that the entire process takes place "at a distance" from the animator, as it involves using

24 For example: *Here and the Great Elsewhere* (2012), by Michèle Lemieux: https://www.nfb.ca/film/here_and_the_great_elsewhere. The pin screen was a technique created and developed by Alexander Alexeieff (WILLOUGHBY, 2009) – strata-cut was developed by David Daniels (FURNISS, 1998).

25 https://vimeo.com/39368085.

26 These are small software programs that work together with other programs to create image effects.

27 Which used a 3D animated bear. *The Revenant* won the *2015 Annie Awards* (Character Animation in a Live Action Production, https://annieawards.org/legacy/43rd-annie-awards). The bear sequence: https://vimeo.com/150120476.

28 https://www.youtube.com/watch?v=bN1_h_eGitE

specific equipment and resources for modeling and sculpting in an environment that only exists mathematically. To apply color to a character — and this also applies to 2D — the animator does not use pencils or paints but software tools to fill in the areas delimited by vector (mathematical) lines. Modeling is done by manipulating a virtual mesh using a mouse or digital pen, eliminating the need for direct physical contact and avoiding dirty hands. In this relationship, whether physical or codified, the intermediate factor differs significantly from traditional figurative techniques.

> [...] they replace the real "raw" origin — the reality(s) that an optical image seeks to represent — with a secondary reality, refined, purified in the crucible of calculations and shaping operations. [...] It is no longer about deciding to discover what is visible: it is about discovering what is possible to model (COUCHOT, 1991, p. 58).

If, on the one hand, technology was developed to improve the living and working conditions of humanity, on the other hand, it creates total dependence in this relationship context. Actions are encoded and converted into numbers, then processed to create the images displayed on the screen, playing a significant role in image production today. As Edmond Couchot (1991, p. 58) explained, this has become another reality,

> a synthesized, artificial reality, without material substrate from the electronic fog of billions of micro-impulses that run through the computer's electronic circuits. Line reality that exists only virtually. In this sense, we can say that the image-matrix synthesis no longer attaches to reality: it liberates it. Brings the logic of representation into the era of simulation.

Such mathematical logic underlying this approach also does not allow for improvisation. The "errors" common in manually created animations, which give "life" to the work and constitute a "special defect" of the scene, such as the loss of natural movement, are typical of Stop Motion animations. The computer executes what is ordered precisely, but in the dynamics of the animator's actions, there is room for more spontaneous elements to emerge.

## THE ISSUE OF AURA AND SIMULATION

As Walter Benjamin (1987, p. 168) observes, "what atrophies in the era of technical reproducibility of the work of art is its aura". In other words, when images are reproduced, they lose their uniqueness and authenticity.

Both the filmed image and animated images do not have the aura of a unique work of art endowed with the authenticity of being original, as they exist only as a kind of reproduction. Although, like drawings, painted or engraved images, before being "reproduced," have to a certain extent the aura of the original and authentic image. For example, we have the plasterboards left over from the film *A Noite* (1999) by Regina Pessoa.

The fact that Stop Motion animation "loses" its original (unlike Cartoons) brings it closer to a theatrical performance, in which each performance is unique

despite being of the same play. Each manipulation of the puppet is a unique movement. If another take is necessary, it is another manipulation at another time, just like in another take in Live-Action Cinema. In other words, in Stop Motion (as in Live-Action Cinema), there is only the photographic record of "being here," according to Barthes (2009, p. 40) — what does not happen with cartoons, which always generates drawings or digital files for future editions.

While in Animation there is direct control by the animator over the character, whether in the drawing or the manipulation of materials, in the case of a live-action film, directors depend heavily on the talent and concentration of the actors to obtain the desired effect, and on other professionals for other technical aspects, as well as in animation.

Animation and Live-Action Cinema are different ways of creating moving images. In the latter, the actors' movements are observed as they happen and then captured with the camera. However, in the case of animation, it is planned and built gradually.

In fact, there is no animation without simulation. The movement, scenery, drawings, drawn characters or dolls, everything simulates something. However, in the case of 3D animation, it is a simulation of a simulation because the animation itself already has a degree of simulation. When trying to recreate the "real," a hyper-reality is created, both in the sense of being art and from the point of view of Jean Baudrillard (1991). "Digital" is the technological, productive, and reproductive arm in the field of image representation.

## FICTION AND NATURALIST AND CONNOTATIVE IMAGES

Fiction films aim to present something someone imagined, consisting of two non-realities: the fiction itself and the way it is represented (images, objects, and actors) (AUMONT, 2008). Animation, however, consists of three non-realities: the story's fiction, its representation, and the life its elements seem to have — the artificiality of movement.

Filmed images can portray an action, a real record (such as a documentary), and even a non-narrative film. Animation can also tell a story, and it can be a documentary — such as *Waltz With Bashir*[29] (2009), by Ari Forman — and a non-narrative image — when the objective is to create movement, simply visual, such as *Color Box*[30] (1937), by Len Lye.

However, it is worth highlighting that, according to Aumont and Marie, it is necessary to exclude the possibility of representation (AUMONT, MARIE, 2003) so that no one "can understand the relationships of time, succession, cause or consequence of plans and elements" (AUMONT, 2008, p. 93), that is, it is not possible to identify any narrative.

Therefore, it can be concluded that, in most animation works, the representation of some narrative is almost always likely, even if it is unintentional. The audience

29 The animation tells the story of former combatants from the 1982 Lebanon War. https://www.youtube.com/watch?v=Ak_2NWhr_g4

30 https://archive.org/details/A_Colour_Box

can create some kind of narrative, based on shapes and the sequence of their movements over time — for example, simple spots may look like character circles, as in *Boogie-Doodle*[31] (1941), by Norman McLaren.

Live-action and animated films can be connected to naturalistic imagery. Classic Disney animations[32] and *Final Fantasy: The Spirits Within*[33] (2001), by Hironobu Sakaguchi, are examples; just like Martin Scorsese's films, such as *Taxi Driver*[34] (1977) and *Raging Bull* (1980) — but they are different degrees of "reality". They can also provide fantasy images, such as Hayao Miyazaki's *Spirited Away* [35] (2001) and George Méliès's *A Trip to the Moon*[36] (1902).

The point is that the filmed image is linked to capturing something that happened at the level of reality (even if it is a staging) serves as an anchor. There is no way to escape the impositions of real materiality. Animation does not suffer from this association, and it is possible to create and invent any situation, environment, or story, as its characters can explode and come to life soon after.

Two highly regarded directors, Norman McLaren and Andrei Tarkovsky, stated the same thing differently, each about their own art forms. According to McLaren (*apud* AUMONT, 2012, p. 21), "what happens between each image is more important than what exists in each image. Animation is, therefore, the art of manipulating the invisible interstices that lie between frames." While Tarkovsky (2002, p. 77) observed: "The image [...] becomes truly cinematic when (among other things) it not only lives in real time but rather when time is also alive within it, even within each frame."

In other words, what is important is what is "between" the frames, just like in writing, where what really matters is what is between the lines. It is understood that they refer to a visual aesthetic issue. However, there is also a semiotic component: "images are not the things they represent, but they use things to talk about other things" (JOLY, 1996, p. 84). What is out of the picture (often) is what is actually being expressed. This statement applies to both Animation and Live-Action Cinema — as in films such as *The Hand*[37] (1965), by Jiri Trnka, and *The Great Dictator*[38] (1940), by Charles Chaplin.

However, Animation is less linked to reality than Live-Action Cinema, so it manages to transcend this characteristic much more easily. Moreover, if, although connected to "reality", the filmed image is the form of art that is most connected to the imagination of humanity (MORIN, 1956), Animation — which does not have this requirement — is the connection with the imagination itself. What is seen, and

31 https://www.nfb.ca/film/boogie-doodle

32 Like *Snow White and the Seven Dwarfs* (1937), by David Hand. https://www.youtube.com/watch?v=-sxbZ70VRsg

33 *Trailer*: https://www.youtube.com/watch?v=GnE64DbnUzY

34 *Trailer*: https://www.youtube.com/watch?v=UUxD4-dEzn0

35 *Trailer*: https://www.youtube.com/watch?v=ByXuk9QqQkk

36 https://www.youtube.com/watch?v=S5dG3Skdq6U

37 https://vimeo.com/60337657

38 https://www.youtube.com/watch?v=-jj-PaqFrBc

known not to be "real", is naturally abstracted from reality but finds a connection with emotions and ideas, as what is seen is not real but continues to talk about things that exist. In other words, it is possible through Animation to present absolutely convincing concepts, feelings, suffering, and experiences — as in *Aria*[39] (2001), a puppet animation by Piotr Sapegin, in which the character from Giacomo Puccini's opera, Madame Butterfly, commits suicide by dismantling himself.

## CONCLUSION

Table 1 presents a final summary of the comparisons mentioned throughout the text.

Table 1. Characteristics: Animated image *vs*. Live-Action image.

| Characteristics | Animated image | Live-action image |
|---|---|---|
| Fundamental basis | Movement | Montage |
| It is the result of | Optics + technique + aesthetics | Optical + Photography + Dramaturgy |
| The movement | It is simulated, created frame by frame (captured, scanned or photographed) | It is real, captured by camera |
| Works with | Still images | Real action |
| Image construction | Everything is created | Uses things and actors |
| Its fiction is | In representation + in narrative + in movement | In representation + in narrative |
| Possible genres | Fiction, Documentary and Experimental (abstract) | Fiction, Documentary and Experimental |
| Degree of reality | As a representation (drawings), it is relative. But as a 3D image, it can achieve photorealistic aesthetics | As a photographic image linked to reality, it is direct and strong |
| Degree of connotation | As a representation, it can be more direct, less restrictive (by logical thinking) and therefore broader | As a photorealistic image linked to reality, it is more indirect and censored by the sense of reality |

The movement seen in live-action films is a recording of real action. In animation, this is a simulation, and in itself a kind of virtualization, in which, according to Pierre Lévy (2007, p. 17), "it is not a *déréalisation* [...], but a change of identity, a displacement of the ontological center of gravity of the object considered [...]", noting that "the invention of new speeds is the first degree of virtualization" (2007, p. 23).

Regarding image construction, it is undeniable that the possibility of managing this process is deeper and more complete in Animation than in Live-Action Cinema. As an image, the animated form allows for more outstanding visual and aesthetic integrity, resulting from total creation and construction. In Live-Action Cinema, it is necessary to incorporate other elements outside the director's control. Hitchcock

39 https://www.n®.ca/lm/aria_en

said that, as a director, he needed to wait for the actor's performance to proceed with the scene — but he preferred not to wait (TRUFFAUT, 1974). In Animation, this dependency does not exist.

Every time you need to represent something outside the limits of material reality, Animation is used as a special effect — which is nothing new, a tactic having been relied upon since the times of George Méliès. And it is widely used, as in the case of the Harry Potter series, Lord of the Rings, among many others. It is also used as a matter of practical and production economy[40], as in Ang Lee's *Life of Pi* (2012). In fact, Manovich (as mentioned) is correct. Furthermore, in this context, using 3D to create naturalistic environments and characters has historically created two critical and contradictory situations. If in the past, Arts pursued the faithful representation of reality, mimesis, which was broken with the advent of Photography, today, the main objective of developing the virtual representation of "reality" is the hyper-reality of the image for cinematic images — considering that the Seventh Art is a consequence of the advancement of the Arts and Technology of Modernity — and as a result, we seem to have returned to the past.

If through Photography, an art technique that allows reproduction, the "aura" was lost, with the digital image, the snapshot is lost since the original no longer exists. At that time, this was a light-sensitized emulsion, whereas today, it is a digital record (of files with "zeros" and "ones"). There is a mathematical coding of the captured image (the quality depends on the size and capacity of the device's sensor) — which can be digitally manipulated indefinitely, generating another image in each instance. As François Soulages (2009) states, "To plagiarize Koyré, we can say that we have gone again from a closed world (an image closed in on itself) to the infinite universe (an infinitely explorable and modifiable image): this is a new Copernican revolution."

This observation applies to both Animation and Live-Action Cinema. Logically, such advances allow for savings and agility in production, which is essential in any profitable business. However, we must be aware of this process and how it happens.

Benjamin (1987) declares Photography as the seed of Cinema. While Morin said that Cinema is the seed of the virtual, taking into account the entire "cinematic apparatus" — the screen, the cinematographic camera, and the projection. And in 1956, he had already developed a conclusion applicable to both means of creating a moving image, even today:

> We are at the very moment in history when reciprocally, the machine involves and determines, or rather, realizes, the essence of man. [...] The cinema is the mother-machine, the imaginary generator, and, reciprocally, the imaginary determined by the machine. It came to settle in the heart of aesthetics, which was considered to be reserved for individual handmade creations: the division of labor, rationalization, and standardization command the production of films. Even the very word production has replaced creation (MORIN, 1956, p. 241).

40 In the case of films involving actor interaction with wild animals and risky scenarios, 3D Animation offers safety and savings in time and money, training, and creating or accessing real scenarios.

## REFERENCES

ARNHEIM, R. **Art and visual perception, a psychology of a creative eye**. Berkeley, Los Angeles, London: University of California Press, 2004.

AUMONT, J. **A imagem**. Campinas: Papirus, 2001.

AUMONT, J.; MARIE, M. **Dicionário teórico e crítico de cinema**. Campinas: Papirus Editora, 2003.

AUMONT, J. **A estética do filme**. Campinas: Papirus, 2008.

AUMONT, J. **A teoria dos cineastas**. Campinas: Papirus, 2012.

BARTHES, R. **Câmera clara:** nota sobre fotografia. Rio de Janeiro: Nova Fronteira, 1984.

BARTHES, R. **O óbvio e o obtuso**. Lisboa: Edições 70, 2009.

BAUDRILLARD, J. **Simulacros e simulação**. Lisboa: Relógio D'água, 1991.

BAZIN, A. **What is Cinema?** Berkeley, Los Angeles, London: University of California Press, 1967.

BAZIN, A. **O Cinema: ensaios**. São Paulo: Editora Brasiliense, 1991.

BECK, J. (Ed.). **Animation art:** from pencil to pixel. London: Flame Tree Publishing, 2004.

BENJAMIN, W. A obra de arte na época de suas técnicas de reprodução. In: MAGIA E TÉCNICA, ARTE E POLÍTICA: OBRAS ESCOLHIDAS. São Paulo: Editora Brasiliense, 1987.

CHOLODENKO, A. **The illusion of life II**. Sydney: Power Publications, 2007.

COUCHOT, E. De la représentation à la simulation. Évolution des techniques et des arts de la figuration. *In:* NOBLET, J. de. Culture technique - images technique société. **Neuilly-sur-Seine: e C.R.C.T**, n. 22, p. 53-61, 1991. Available from: <http://classiques.uqac.ca/contemporains/Culture_technique/culture_technique_22/culture_technique_22_sommaire.html>. Cited on: Feb. 10, 2016.

CRAFTON, D. **Before Mickey:** the animated film 1898-1928. Chicago: The University of Chicago Press, 1993.

DENIS, S. **O cinema de animação**. Lisboa: Edições Texto & Graça, 2007.

FURNISS, M. **The Animation Bible!** London: Laurence King Publisher, 2008.

FURNISS, M. **Art in motion:** animation aesthetics. London, Paris, Rome, Sydney: John Libbey & Company Pty, 1998.

GRAÇA, M. **Entre o olhar e o gesto:** elementos para uma poética da imagem animada. São Paulo: Editora Senac, 2006.

GRUNEWALD, S. J. 3D printing plays big role in new stop motion film from the makers of coraline and paranorman. In: **3D Printing Industry**, [s.l.], 15 set. 2014. Available from: <https://3dprintingindustry.com/news/3d-printing-plays-big-role-new-stop-motion-film-makers-coraline-paranorman-32985/>. Cited on: Jun. 9, 2023.

IRZYKOWSKI, K. Le royaume du mouvement [1913]. In: BANDA, D.; MOURE, J. **Le Cinéma:** naissance d'un art 1895-1920. Paris: Éditions Flammarion, 2008. p. 257-262.

JOLY, M. **Introdução à análise da imagem**. Campinas: Papirus Editora, 1996.

KOULECHOV, L. L'Essence du Cinéma… c'est le montage [1920]. In: BANDA, D.; MOURE, J. **Le Cinéma:** naissance d'un art 1895-1920. Paris: Éditions Flammarion, 2008. p. 509-512.

LESLIE, E. **Hollywood flatlands:** animation, critical theory and the avant-garde. London, New York: Verso, 2004.

LÉVY, P. **O que é virtual?** São Paulo: Editora 34, 2007.

MASCARELLO, F. **História do cinema mundial**. Campinas: Papirus, 2006.

METZ, C. **A significação no cinema**. São Paulo: Perspectiva, 1972.

MORIN, E. **Le Cinéma ou L'Homme Imaginaire, Essai d'Anthropologie**. Paris: Les Éditions De Minuit, 1956.

MANOVICH, L. **The language of new media**. London: The MIT Press, 2001.

SOULAGES, F. Pour une nouvelle esthétique de l'image. *In:* CONFERÊNCIA SOBRE A IMAGEM, 2009, Rio de Janeiro. Universidade Federal do Rio de Janeiro, 17 de junho de 2009.

TARKOVSKI, A. **Esculpir o tempo**. São Paulo: Martins Fontes, 2002.

TRUFFAUT, F. **El Cine Según Hitchcock**. Madrid: Alianza Editorial, 1974.

WILLOUGHBY, D. **Le Cinéma Graphique**. Paris: Éditons Textuel, 2009.

## ABOUT THE AUTHOR

**Eliane Muniz Gordeeff:** PhD in Fine Arts, Multimedia Specialist, by Universidade de Lisboa, School of Fine Arts, Center for Research and Studies in Fine Arts (Centro de Investigação e de Estudos em Belas-Artes – CIEBA).

**Conflict of interests:** nothing to declare – Financial support: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).