The Future of Animation

More Realism and Immersion

The history of animation is longer than the history of live action cinema. In fact, the earliest moving images were already animated, before the invention of photography. Digital technology has united animation and live action into a seamless amalgam, seen especially in mainstream superhero movies. Digitalisation has created jobs in the movie, television and game industries. It is already possible to create photorealistic scenery and objects with digital animation and replace actors when necessary. Soon it will be possible to create virtual actors and reanimate the stars of yesteryear, such as Marilyn Monroe or Humphrey Bogart. The next step for the development of digital animation is virtual reality, which has already had its first commercial breakthrough.

Digitalisation has changed the face of animation and, in large part, the machinery of cinema in general. However, it is only the latest of many technological innovations in the history of moving images. Technology and aesthetics are more intertwined in moving images than in any other art form. The illusion of movement has always needed technology to be developed. Often the discussion is centred only around cinema, if not only feature length live action fiction movies. In a wider historical sense, other forms and techniques, such as television and animation, cannot be excluded.

The optical illusion of a rapidly seen succession of still images giving an impression of movement is behind all these different forms and techniques. The gimmick was known long before what is seen as the birth of modern cinema in the 1890s. The principal idea of movies was utilised in magic lantern shows, at least as early as the 1700s. Starting in 1833, the phenakisticope and other devices (zoetrope, praxinoscope) used rotating drawings to provide short moving sequences. The same little loops have recently been resurrected as GIF files spread via social media on the internet. Before photography, and before motion picture films, moving images were drawn or painted. Therefore, the history of animation predates the history of live action cinema by over 200 years.

The invention of film material made the production and distribution of moving images more efficient than ever before. The novelty of the spectacle of moving images soon wore off and mainstream movies started to tell more elaborate stories, joining narrative arts, such as literature and theatre. In a business sense, it could be said that cinema replaced theatre as a more efficient way to sell acted stories to a wide audience. Similarly, the next technological device, television, caused headaches for the cinema industry. Both theatre and cinema survived, though.

Animation and live action go their separate ways
In the early days, Georges Méliès developed and used animation techniques to produce his
fantasies alongside other techniques. Cinema found its tools and for a brief moment used them indiscriminately.

Soon animation separated from live action to become a genre of its own, specialising in humour. Live action was more efficient in visual realism. Caricature and stylisation were inherent in handmade, labour-intensive animation. As it requires intensive manual labour, most animations were short in length, for a long period of time. Disney was neither the first nor the only one to produce feature length animations, but it was, and is, the longest established in the field.

Recently, many of the technological inventions that were seen for around 100 years as the basics of cinema have become almost obsolete. This has happened perhaps even faster than when they became standards, around 100 years ago. Digitalisation has swept away film as a physical material. Movies are not shot or projected on film, except in special cases. Digital has replaced the old handcraft techniques of animation and has left drawings, puppets, etc., alive for art, barely for commercial entertainment.

Pixar Animation Studios produced the first feature length computer animation, Toy Story, released in 1995. Now even Disney, merged with Pixar, has abandoned traditional hand-drawn animation; the last one was Winnie the Pooh, released in 2011.

At the same time, more feature length animated movies are being produced than ever before. In Europe, the industry has grown from near non-existent to thriving. For example, two digitally animated movies about the flying reindeer Niko, The Flight Before Christmas (2008) and Little Brother, Big Trouble: A Christmas Adventure (2012), have been exceptional international successes for the Finnish film industry.

Digitalisation re-unites animation and live action

It is not clear how important digitalisation is for the growth of animation production and markets. Many working in the field claim that digital animation is no less labour-intensive than traditional hand-drawn animation. Apparently, there must be reasons other than technology for this growth.

Meanwhile digital animation has seeped into live action film-making in the guise of special effects. The development of technology has made it possible to move the superheroes of comics to movies. It finally seems believable that Superman can fly, as seen on the big screen. Superhero movies have become the mainstream of Hollywood and mainstream cinema has never been as infantile. These movies tell stories of boyish fantasies of supernatural powers and superficial moralities. The connection to the real world is allegorical at best.

Special effects sounds too small a term for the digital animation in today’s superhero and science fiction movies. Animation is as integral to them as in the days of Georges Méliès. At the same time, cinema seems to have regressed closer to the attraction of spectacle than at any other time in the last 100 years. Even simplistic stories of battles between good and evil are secondary to the action that is not far short of magic. The combining of live actors and digital effects is already nearly seamless, not only for the spaceships and explosions of the fantasy genres. Period specific details can be produced digitally. For example, in the biggest Finnish movie production ever, a new version of the war epic The Unknown Soldier (directed by Aku Louhimi, to be released in 2017), all the aeroplanes in the distance are created digitally. Real planes of that period, if available, would be much more expensive.

Digital animation has created a growing demand for animators in movies, television and especially in the computer game industry, a new field born out of technology. Never before has there been as many people working in animation but a vast majority of these jobs require digital skills.

However, drawings and puppets are still animated into life. Traditional animation handcraft techniques are now almost exclusively seen within art movies and short movies,
and usually shown in film festivals around the world.

**Photorealistic animation is here**

Meanwhile, digital animation keeps developing towards photorealism. Pixar has often led not just the commercial use of digital animation but also its technical development. It has often experimented and pushed the boundaries in short films that do not serve any commercial purpose. In *Piper*, currently the latest short, showing before the feature *Finding Dory* (directed by Andrew Stanton and Angus MacLane, 2016), Alan Barillaro has created scenery so convincing that, at first, it is impossible to know whether one is looking at animation or real footage. In *Piper*, the sand, the water and the birds’ feathers are especially realistic. Up until now it may have been possible to create one of the three, but not all at the same time. One can sense the boasting pride of achievement in the imagery in *Piper*.

In most cases, the makers of commercial animated features are not aiming at photorealistic impressions. The movies are meant to be family entertainment, funny and stylised. But in special effects for live action movies or the fusion of live action and animation, photorealism is desirable.

Since the first breakthroughs of digital animation the question of replacing human actors has been raised and has been done already. The death of Paul Walker did not stop the completion of the action movie *Furious 7* (directed by James Wan, released 2015). The company Weta Digital replaced Walker with a digital double or virtual actor. In *Batman v Superman: Dawn of Justice* (directed by Zack Snyder, released 2016) actors were scanned and made into virtual versions easily compatible with digital effects in the more unrealistic scenes. Now, virtual versions of actors are routine but it is still very expensive to make models that are convincing in close ups. Nuanced acting as realistic humans is still difficult, but the day when it becomes possible, even easy, to completely replace actors with digital models is approaching.

Usually it is argued that copying live actors does not make much sense since the real thing is available. Be that as may, digitally copying dead actors could make a lot of sense. How valuable would the stars of yesteryear, Lauren Bacall or Humphrey Bogart, be for the movie industry of today? Especially if you did not need to pay millions for their work or have to worry about their demands and tantrums? Making them do publicity might remain difficult, of course.

**Reality becomes virtual**

Digital influence does not stop there: it is already taking the next step. Visual narratives are getting ready to leave the silver screen and the more modern screens of televisions and computers. Many have stated that 2016 is the year virtual reality emerges into the mainstream.

Virtual reality first made a splash in the 1990s, but soon died off quietly. The current development started in 2012 when Palmer Luckey launched a Kickstarter project to create the first affordable virtual reality headset. In March 2014, Facebook bought Luckey’s *Oculus Rift* for two billion US dollars. There is at least one artist in Finland experimenting with animated narratives for *Oculus Rift*. Dave Berg’s small-scale dramatic works are impressive and promising. Similar pioneering artists are likely to surface in many places.

Quite recently, virtual reality took over *FMX 2016 – Conference on Animation, Effects, Games and Transmedia*, organised in conjunction with the Stuttgart Festival of Animated Film in May 2016. Other topics and demonstrations were almost completely drowned out by virtual reality. Reports from the Cannes sidebars are similar. This time, the technology seems ready: consumer systems are already on sale. Moreover, combinations of virtual reality and mobile phones are available, which promise online connections between virtual reality sets.

Virtual reality promises a far more immersive experience than any previous interface of moving images. So far the most obvious
application is games and virtual pornography is already available.

It is not yet possible to tell all or even the most natural applications of virtual reality. Plans include virtual attendance at concerts and other events. Virtual meeting rooms promise to enhance conference calls greatly. Virtual environments for games and narratives will most likely be digitally produced at least mostly, for a while. Shooting live action for virtual reality is difficult but that is being worked on as well.

Virtual reality is taking animation, and movies in general, to the third dimension in more concrete way than any 3D movie could.

References
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Harri Römpötti, a freelancer cultural journalist and reviewer living in Helsinki. His areas of specialisation include film and comics. He has been writing, for example, for *Helsingin Sanomat*. 