CGI and its impact on the film industry
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As it stands today, Computer Generated Imagery (CGI) is so crucial to film that it leads many to take it for granted. Several, if not most, of the top-grossing films, have all used and relied on CGI. Its use in films can be traced back to Alfred Hitchcock's VERTIGO (1958) with its intro, using Anti-Aircraft targeting computers on rotating platforms with a pendulum hanging above it creating the spiral effect, an abstract method by today's standards. 2D animation would make its debut in 1973 Westworld and 3D in the sequel Futureworld in 1976. Extensive use if 3D animation made its way in Steven Lisberger's sci-fi TRON in 1982, it is particularly significant as it achieved nearly 15 minutes of digital effects, including the light-cycle race, with only 2Mb of memory. As technological advances continued, the amount of animation and its increased abilities led to the hit of Toy Story, being the first-ever fully CG movie in 1995. From there the growth in CGI technology had grown exponentially, leading to things like motion and facial capture, making the animations come more to life. Today it can be considered a norm to utilise CGI. The impacts of CGI on the industry are quite astounding and its benefits to film outweigh the cons significantly. Increasing safety and reducing costs whilst expanding the creative pallet in the industry and providing a level of immersion that could have been deemed unimaginable over half a century ago. However, some traditionalists in the industry feel that it has taken away from the acting may have differing opinions, overall CGI's impact on film has been impressive and now a necessity in the modern film.

Firstly, the use of CGI has led to increased safety, whilst reducing time and costs in production. Before dependence on CGI, filming several scenes involving stunts, parkour and other dangerous activities were a huge threat to the safety of the actors. For example, having an actual sinking ship with passengers on board would be extremely dangerous and unpractical. Having animation instead recreate the scene would put no-one's lives at threat whilst being an accurate and realistic portrayal on-screen. An instance where death onset could have been avoided was in 1959 The Horse Soldiers where Fred Kennedy, an infamous veteran stuntman had died in Louisiana whilst falling of a horse. If the movie was to be filmed today, the accident could have been completely avoided by having the final battle scene animated. Animation could have removed several variables, such as weather and environment conditions, horse behaviour, saddle strap tightness etc. Another important benefit being the saved time and costs of production. Using the same film to demonstrate the point, the time taken to assemble all those resources may have been extremely long, for example, the horses, people, clothing, filming equipment, etc. Also, now factoring all the costs involved in having all the above and transporting it to the respective location would've been quite expensive. Having a team of illustrators and animators instead would save costs significantly, since most of the elements could've been easily replaced, like filming location or horses. This showing how several CGI has been imperative in safety and saving costs along with time.

CGI has been extremely vital in allowing for greater expression of ideas and promoting more creative ideas. Beforehand, the inability to use CGI in films meant communication of ideas was extremely weak. To convey messages to an audience about a character's strength may have been extremely difficult without CGI. Great examples of this are Marvel's avenger films, how could one illustrate the power of a character like Thor without CGI? His abilities with his hammer and control of lighting and thunder (can be seen in THOR 2011 for example) would be impossible without it. CGI allows him to have those powers thus, makes him appear more like a "God." Depicting him as this was most likely the intent of Marvel, and not having CGI greatly limits how J. Michael Straczynski and Mark Protosevich would have wanted the character to be expressed as to the audience. Another point to add is how the use of CGI more creativity. With CGI the possibilities for any scenario are expanded, and there is no longer a limit to the real world. It can be said that CGI gave way to sci-fi as a genre, as concepts in those films would have been very impractical to film without any animation. Before CGI and its heavy use, several films tended to be based in history, popular culture in the 50s and 60s western culture was movies about WW2, for example, The Bridge on the River Kwai, the Dirty Dozen and The Longest Day were all based on WW2. When CGI was introduced, the growth of Sci-Fi, for example, was rapid. Movies like Blade Runner, The Terminator and Star Wars: A New Hope and such all took off in the 70s and 80s when CGI was beginning to take a foothold in the film industry. This proving how CGI paved the way for more creative genres like Sci-Fi.

Another point is that CGI has led to increased immersion in films. CGI can ironically make films feel more real, even though animation is not "real life." Star Wars as an entire series is an excellent example of this. Throughout the saga, CGI has created environments and created lively within those environments. Planets in these movies are all given very distinct feel because the assets, in theory, are unlimited allowing for the creation of alien-like objects and organisms, which gives the audience the immersion of being in a vast universe, where things are unlikely to be similar to what we have on our planet. Another way immersion is created is through scale, i.e. in large space battles where the raw number of spaceships are so high, creates a sense of the battle being grand and important, once again linking into the vastness of space itself. Without CGI, it wouldn't be possible to create immersion in aspects like the militaristic nature of Star Wars, or the grand adventure of space.

However, there is a common argument that acting and directing may be suffering from CGI. Valerian and the City of a Thousand Planets; a movie that received heavy criticism for the overuse of CGI. Animation can be used as a substitute for acting skill, since a movie may focus on scale and elements other than the actors to create a feeling of the sublime. This shift in priority harmed a film like Valerian, as many felt disconnected to the characters. The movie seemed dull as characters were disconnected from the physical environment, this destroying that sense of immersion. Also, acting as a job would be under threat, seeing as CGI can animate humans and portray realistic movements and behaviours, therefore it could be possible that the profession could be under threat. Furthermore, directors may not be at the same standard as they once were. This is so as CGI makes it easy to mask mistakes or issues, therefore directors can be lazy knowing that imperfections can be corrected later, making the job less demanding in this aspect.

Although, it is vital to acknowledge that CGI and high level of acting can co-exist, and thus the causation between the two can be prevented. Movies would struggle to make larger profits, if both CGI and acting aren't at a high standard, this giving the incentive to make sure acting and CGI have the correct balances. This applying to directors as well. Also, CGI is once again much cheaper and, in most instances, more practical than using real sets in that sense.

To conclude, CGI has had an extremely positive impact on the film industry. It has proven to be more cost-productive, safer, more expressive, promotive of creative and immersive. Particularly, the ability to promote creativity and express ideas allows for films to be more diverse and interesting. Understanding that it has negative aspects such as the focus on CGI diminishing acting, it would be hard to imagine the film would CGI in the 21st century.

References:

Burwick, K. (2019, September 12). Why 'Avengers: Endgame' Had to Use So Much CGI. Retrieved from https://movieweb.com/avengers-endgame-why-so-much-cgi-rushed/.

Esquire Editors. (2017, October 11). The 20 Best World War II Movies Ever Made. Retrieved from: https://www.esquire.com/entertainment/movies/g3476/best-world-war-2-movies-of-all-tim e/?slide=19.

Fred Kennedy (1909-1958) - Find A Grave Memorial. (2006, August 9). Retrieved from https://www.findagrave.com/memorial/15199459/fred-kennedy.

IMDB. (1959, September 19). The Horse Soldiers. Retrieved from: https://www.imdb.com/title/tt0052902/.

Nguyen, S. (2017, December 15). Is CGI Becoming a Burden for Film Industry? Retrieved from: https://medium.com/@sannguyen/is-cgi-becoming-a-burden-for-film-industry-bf1be2f2976d.

Nedomansky, V. (2019, March 21). The Ultimate History of CGI in Film: VashiVisuals. Retrieved from: https://vashivisuals.com/the-ultimate-history-of-cgi-movies/.

Semlyen, P. D. (2010, December 17). A History Of CGI In The Movies. Retrieved from: https://www.empireonline.com/movies/features/history-cgi/.

Wikipedia. (2019, November 5). Thor (film). Retrieved from: https://en.wikipedia.org/wiki/Thor_(film).