Introduction who invented the motion picture camera, the

Art & Culture, Artists

INTRODUCTIONToday, Technology is evolving every day and we are forced toadapt to them as they make things work so much easier and smoother. It has changed the way we observe things, the way we observe our past orour history. From the first cameras straight through to motion pictures andtelevision, we have become a much more visually oriented society.

Now a days, weread less, think less, and observe more. Earlier was a generation that carriedprotest signs but now we post memes on Facebook. We want everything to be done witha touch of click and we are so visually addicted to the screens. Now, we livein a world where Photography is moving away from realism and the world ofanimation (Moving Pictures) is moving towards realism. No matter who invented the motion picture camera, the person had no ideawhat it would become at the turn of the century. Motion pictures andphotography have become an entertainment medium like no other. The evolution ofmoving pictures to a pure art form has been quite amazing.

Different techniquesevolved in each age to make the things easier such as from Silent to sound, shortto long, black and white to colour and analog to Digital. All were importantmarks in the history of Motion Pictures. The motion picture is a remarkably effective medium in conveying amessage or narrative through visuals and emotions.

The art of motion picturesis exceedingly complex as it requires contributions from nearly all the otherarts as well as high technical skills. Considering it as a commercial venture, offering various fictionalnarratives to large audiences in theatres, the motion picture quickly has been recognizedas probably the

first truly mass form of entertainment. Without losing itsbroad appeal, the medium also developed as a means of artistic expression insuch areas as acting, directing, screenwriting, cinematography, costume and setdesign, and music. With the help of artists from various fields, the medium ofmotion pictures is approaching realism and the audiences are in awe as to howthese are made.

ANIMATIONOne of the best examples of motion pictures that has had arapid growth is the field of animation. ‘ Animation’ is a term that is used todefine a broad range of practices in today’s world. It takes form in differentgenres capturing imaginations and we can see that animation is presenteverywhere from big screens to small screens (Mobile phones). The idea ofIllusion of motion created through the incremental movement of forms ordrawings displayed sequentially as a motion picture is where the world ofanimation began to emerge and expand. Animation began with 2D animation that typically employs a series ofhand-drawn images or painted images, Stop motion animation that consists ofpictures of puppets or other objects that are modified in position or form ofmovement over time and 3D animation which is digitally produced with imagessimulating deep space. It is a field that can give life to any being whichno other art form can. For centuries, people have made many contributions and inventions to thedevelopment of motion pictures.

Some of these inventions or techniques surviveduntil the 20th century while the others had a relatively shorterexistence. Even though some of them are considered to be a failure at thetime, it is believed that these techniques

were a part of forming a bridge towhat animation is today. Animation was developing its own aestheticlanguage with each technique invented. With each development, however, Disneymoved further from the plasmatic flexibility and started to coerce theanimation form into a neo-realist practice. It now had the power to transportthe viewer to endless possibilities. As animation began to grow as an art, the expectation of what animationwas began to increase.

Even though there were many people and companiesproducing animation in various fields, Disney was the one company thatestablished what animation is and raised the standards to a higher level witheach work they produced. In olden days 100s of animators had to work on a single production withexpensive and bulky equipment. Studios had very little room for experimentationand most of the animation productions did not make money.

The definition ofwhat animation was capable of seemed to be unattainable without a goodbudget. All animated movies are built on and driven bypassion. It takes more than 4 years to create a 90-minute movie with around130, 000 frames. Played in over 45 languages, regardless of the country andculture, the audience enjoy every bit of the movie and the theatre is filledwith the universal language of laughter and emotions. One such animation thatemerged out of comic books is The Adventures Of Tintin. FROM INK ON PAPER TO REALITY COMICS Comics contain series of drawings that express ideas often combined withtext or any other visual information. The birth of this beautiful combinationof ink and paper began in

the 19th century as a small part ofnewspapers and magazines and eventually led to having an own book or magazinesfor that particular character for comics.

However, the origin of comics is longbefore that. Even before the invention of comics, stories were expressedthrough sequential drawings too. In Scott McCloud’s Understanding comics, hehas explained about a pre-columbian manuscript that was 36-foot long andcontained brightly colored paintings which represented various characters andalso a story. This was during the 1500s. This is not the only example. Early manalso used to carve on stones or even ancient buildings sometimes contain aseries of sculptures that depict a story. Comics evolved from then to now beingable to achieve various things with the help of technology.

Tintin was and still is one of the most famous comics. The firstappearance of Tinitn was on 10th of January 1929 by Georges Remi, who wroteunder the pen name Herges. A Belgian newspaper named Le Vingtième Siècle publishedcomic strips of tinitn in French.

Eventually, the series began to flourish andit soon published in the leading newspaper of Belgium. This led to having aseparate magazine for tintin which allowed Herge to explore different culturesand genres of stories. The comic series has been admired for its clean, expressive drawings. Herges combines iconic characters with unusually realisticbackgrounds and the plots are well-researched with a variety of genreswhich had the readers hooked to their books. No non-iconic abstractions.

The technique used to create this comic back in those days was famous. Comic strips were drawn using brushes with ink on plain papers and printingthem as a series of images onto a paper. Initially, it started as a black andwhite comic.

With the development of technology, colours became a huge part ofvisual ideas and the comics were redrawn with colour images. Tintin is anabstract style of comic where the images drawn are drawn from reality and yetare far from reality. But the readers accept them as real characters andinvolve in the story. The mind has no trouble in accepting the characters andthe scenarios even though they look cartoony. The good thing about comic booksare that they let us explore the world of that specific story in our own ways.

We don’t just observe the cartoon, we become it. Likewise, in the scene chosen above, the readers do not just see thepictures, but feel it and hear it through their own ways. The combination ofthe background and the characters allows the readers to mask themselves as thecharacters and enter the magical world. When cartoons are used throughouta story, the world of that story may seem to pulse with life.

This specific scene that I have chosen from this comic is where Tintinand Captain Haddock escape from the ship by taking a boat and an aeroplane thatlater crashes. This scenes takes up almost 9 pages of the comic book. A basic application of Barthe’s theory to a comic panel: An image may convey n number of meanings. But when there is story goingon as a comic, the artist

should be sure to covey the right emotions to makethe reader feel and understand the story. Herges has been a great artist andthe readers had no difficulty in getting involved with the characters or thestories of Tintin. According to Roland Barthes, any image contains three different types ofmessages.

a. Linguistic message: Barthe's says ' the linguistic image is present in everyimage: as title, caption, accompanying press article, film dialogue, comicstrip balloon'. Linguistic message has two possible function. One is theanchorage and the other is Relay.

In this comicpanel, we can notice a Relay linguistic message which means that both image andtext act together to convey some meaning. There is a question mark and anexclamatory mark in bold inside a bubble which draws attention first. By this, we can understand that Tintin is in shocked and confused and we are about tofind out why when we move our attention to the complete panel. If therewas no conversation balloon in this panel, we would not have understood thereaction of tintin. This is because the angle or perspective of this panel doesnot show Tintin's face and hence we cannot decide on his reaction. Whereas withthe '?!' in bold, we understand that tintin is confused as to what is happeningin front of him. b. Literal or denoted message : On a literal level, we can identify all theobjects in the panel and we can understand what is going on in the panel.

Here, the signifier is the symbol in the bubble which is expressed by Tinitin and thesignified is the scene or the idea indicated by the signifier which

happens tobe the fire. c. Symbolic message: The literal and symbolic messages are not separatedeasily. In this panel, we can see that the boat is in the water and it hascaught fire. The way the water is drawn, we can see that waves are risingbehind the boat and we know that the place is an ocean and not a small river orlake. The lines around the heads of all the three characters show us the panicand confusion as what is going on. The overall composition of this panelsignifies that they are stuck in the middle of the ocean and that it is amoving landscape.

THE TV SERIES – THE 20th CENTURY The Tintin comics spread wide and sold 230 million copies soon and wassoon translated to over 70 different languages. People everywhere loved Tintin. As the technology began to change, the medium of presenting a story also changed. Visually capturing the audience was the goal and slowly the number of comicreaders decreased and people wanted to see stories visually rather than toread. Very soon, Tintin started as a 2D TV series directed by StephenBernasconi which adapted the stories from the comic and the series adheredclosely to the original books to such an extent that some of the frames weretaken directly from the original books to the screen.

The series chose aconstant style of art unlike the books which have the artistic style eventuallychanging over the course of 47 years, during which Herge's style developed. This technique, unlike the comic, requires many more people working on the samestory to produce the right output for visuals. This was done through the technique of traditional animation. Traditionalanimation which is also called as cel animation or hand-drawn

animation, is aprocess used for most animated films during the 20th century. Each framepresent in a traditionally animated film are nothing but the photographs ofdrawings which are drawn on paper.

Each drawing differs slightly from the onebefore it such that it creates an illusion of movement. The drawings are thenphotocopied or traced onto a transparent acetate sheets called cels. These werefilled in with paints with an assigned color or tone on the side opposite theline drawings. Once that is completed, the character cels are photographed oneby one against a background that has already been painted by a rostrum cameraonto motion picture film. This is a labourious process of drawing each frameand having background artists and artists to paint the frames, a person to workon the camera angles and many more. The traditional animation process startedto become obsolete during the 21st century. With today's technology, animators'drawings and the backgrounds are either scanned into or drawn directly into acomputer system. There are various software programs that have come into existenceto color the drawings and simulate camera movement and effects and to do muchmore work in a lesser time which is cost effective and also needs lesser labour.

Animationcan now be created with just softwares instead of things like scanning papers, scanners, ink, paint which were essential for the animation on oldendays. The comic scene that was just around 9 pages long, consumes 5 minutesfor the 2D video scene. SemioticsAudiences read media language to understand messages. this has color, camera shots and angles,

clothing, editing and the staging. Saussure suggested that there are 3 different levels on which the viewerread the media.

Syntatctic level – what they can seerepresentation level – representation of character or placessymbolic level – hidden cultural meaning Barthes developed this theory further A try to analyze the scene using Barthe’s theories: THE 3D MOTION CAPTURE – THE 21st CENTURY Illustrators back in those days were panicking when photography cameinto existence because that was replacing the work of an illustrator and gettingreplaced with this technology was easy as technology started evolving. Inanimation, there is no pre-visualized set of rules and different kinds ofmovies can be made with extraordinary visuals. Technology has now createdmagical doors for the artists by providing a number of tools that allow theartists to elicit emotions in a much more realistic way and they can now createa stunning world in 3D with things like sparkling fire, splashing water, flowing hair that was very difficult or almost impossible in the earlier days.

The Door to Mo-Cap When animators were creating character movements through skethes orsoftwares, they often use a reference video footage to study how someone isacting out a scene or movement of a character’s body. They even look atthemselves in a mirror to create apt facial expressions. Animators have tokeyframe poses and fill the inbetweens to make the character move. To automatethis process, animators looked up to motion capture. Bio-kinetic researcherslike Simon Fraser University’s Tom Calvert were breaking new ground withmechanical suits that captures body language.

With the help of technology, thisprocess got better and better with every little betterment added by differentartists and technicians. An early animation exploiting that tech is theinfamous, creepy Dozo music video from pioneering firm Kleiser-Walczak. In theearly days, motion capture was a studio-only process where actors with tightsuits were alone in the sets surrounded by various special cameras and lights. The movie ‘ Avatar’ introduced a new technique of “ performancecapture” which allowed multiple performers and read facial expressions andlip movement of all those actors present on the sets. Also, games like L. A.

Noire also improved drastically with respect to the realism by combining thefacial features and the full-body capture. Meanwhile, the making of the movie ‘ The Lord of the Rings’ made by WETACompany, brought motion capture out of the studio and onto the sets by allowingpioneering motion capure actor Andy Serkis to interact with other actors as thecharacter ‘ Gollum’. The on-set performance capture also included the face. Thishad set the norm for creating feature films with digital characters and thiswas the huge stepping stone for the WETA company towards motion capture. The technique Motion capture is a technique of recording actions of human actors andusing that information, animate a digital character model in 2D or 3D computeranimation. The amount of animation data that can be produced within a giventime is extremely high when compared to traditional animation techniques. Thiscontributes to cost effectiveness and also meeting production deadlines.

In this technique, movements of one or more actors are sampledmany times per second. The techniques used in early days used images from manycameras to calculate the 3D positions. The purpose of motion capture is oftento record the movements of the actor and the visual appearance.

The data isthen mapped to a 3D model such that the model performs the same actions as theactor. Optical systems work by tracking the position markers or features in 3Dand it assembles the data into an approximation of the actor’s motion. Activesystems use markers that light up or blink distinctively, while passive systemsuse inert objects like white balls or just painted dots (the latter is oftenused for face capture). Marker less systems use algorithms from match-movingsoftware to track distinctive features, like an actor’s clothing or nose, instead of markers. Once captured, motion is then mapped onto a virtual” skeleton” of the animated character using software like Autodesk’s MotionBuilder. The result of this was animated characters that move like real-life performers. It’s difficult to predict how an actor’s movement will translate to an animatedcharacter, so “ virtual cinematography,” developed by James Cameronfor Avatar, is often used. In a nutshell, that shows the digital charactermoving with the actor in real time — on a virtual set — so the director cansee a rough version of the “ performance.

” That involves plenty ofmath, but computers and graphics cards are now fast enough to pull it off. Thevideo below from Weta Digital for The Hobbit: The Desolation of Smaugillustrates the process. This process may be contrasted with the older technique of rotoscopingwhich consumed a lot of

time. The technology cannot yet accurately record the nuances of human behaviourwithout the intervention of animators. But Spielberg appears to have made animators a more integral partof this process. Instead of demanding the animators to make the motion capturedata look realistic, he allowed them a degree of freedom. In LA Timesinterview, he said, “ I can underwrite or overwrite a performance and throughthe animators put something into a performance that even the actors didn’tbring to the bay.” This shows that the animators play a role in creatingthe performance like as in traditional animation.

Steven Spielberg’s exemplary adaptation of the adventures of Tintinenthralled the audience once again. This movie, unlike the 2D series hasadapted 3 of the comics and woven it creatively into a single piece of story. This version of tintin has much more drama and a lot of action compared to theprevious versions of the same stories. It indeed is a delight to see Spielbergplay with the possibilities of the 3D technologies with amazingly impossiblecamera movements, scene transitions and innovative ideas. The same scene of escaping, occupies about 8 minutes of the movie. Here, the story has changed the little bit with regard to the 2 pilots and theairplane.

His attempt to combine motion capture and animation was a huge steppingstone towards success but I think it was not entirely successful. Thephotorealism of the designs are amazing and realistic. But there is adisturbing behaviour of the characters.

Watching a flexible, squash-and-stretchcartoon character like Tom or Jerry or even the characters from ‘ Avatar’wrapped up in a spinning plane propeller and spit out might be funny. But when watchingthe photo real Captain Haddock perform the above scene in the Tintin movie looksawkward and uncomfortable and is far from realism. This discordance betweendesign and performance will be ironed out when the technology is placed in thehands of experienced animation directors who more fully understand how themedium works. Visual Realism: The extent to which the animated environment andcharacters are understood by the audience as looking like environments andcharacters from the actual physical world. Aural Realism: The extent to which the sounds of animated environment andcharacters are understood by the audience as resembling the sounds ofenvironments and characters from the actual physical world. Realism of Motion: The extent to which characters move in a fashion thatis understood by the audience as resembling the way characters move in theactual physical world. Narrative and Character Realism: The extent to which the fictitiousevents and characters of the animated film are constructed to make the audiencebelieve they are viewing events and characters that actually exist. Social Realism: The extent to which the animated film is constructed tomake the audience believe that the fictitious world in which the events takeplace is as complex and varied as the real world.

Paul Wells, as already mentioned, describes hyper-realistic sound inanimation as sound that “ will demonstrate diegetic appropriateness andcorrespond directly to the context from which it emerges.” 29 Generally,

classical models of live-action cinema follow a slightly less strict model, where sounds are generally diegetically appropriate, but certain types ofnon-diegetic sounds (such as a musical score, or voice-over narration) areaccepted by convention. Much of the Disney studio’s animation follows asuperficially similar model, especially if the films are compared withlive-action musicals, where generic conventions allow a looser approach to the” appropriateness” of sound. However, the nature of the animated filmcomplicates the relationship between sound and image, and leads to some subtlebut important differences in notions of what is accepted as realistic. Animation and film are now merging closer together after years ofseparation and it is exciting to experience the blending of the mediums withina fusion of skills that creates a thoroughly hybrid and spontaneous media. Film and photography shifted the way people could perceive things.

Forthe first time, we knew how a horse’s feet fell when running, and could catchalmost imperceptible changes in body language. Benjamin refers to this as “ theoptical unconscious.” Film can magnify the tiniest details, and can slow downor rewind actions—kinds of perception and visualization that hadn’t beenavailable before. The invention of comic strips and books obviously wasn’t ascientific endeavor, relying on printing technologies already in play. Incomparison, comics have given us a (perhaps) universal visual system tocommunicate speech, thought, movement and impact, but it is a light-heartedsystem, and outside of a comic narrative, unsuited to serious expression.

“ Film is the first form whose artistic character is entirely determinedby its reproducibility… The finished film is the exact antithesis of a workcreated in a single stroke. It is assembled from a very large number of imagesand image sequences that offer an array of choices to the editor; these images, moreover, can be improved in any desired way in the process leading from theinitial take to the final cut” (30). CONCLUSION With new softwares developing every day, animation is now seeing a newage of accessibility and innovation. It can now be created and used by everyonearound the world. As a result of this, the big studios are forced to adapt andinnovate to compete with the new wave of creative freedom born with the age oftechnology. In today’s world, no matter who you are or where you are from, you haveaccess to the unlimited possibilities of storytelling.

Technology will developfurther and further each day becoming more powerful and affordable. Withtechnology forever evolving, it appears that animation is at the best it hasever been. It is now a golden age for animation with more possibilities to givelife to one’s imagination.

Will there be a point when computers can no longercope up with the extreme details? The 21st century softwares introducedsomething that revolutionized humanity forever and of course, animation. Animation can now be created with just softwares instead of things likescanning papers, scanners, ink, paint which were essential for the animation onolden days.