Perception of Computer Generated Images (CGI) in Nigerian made animated films: A cognitive-semiotic view

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Abstract

Purpose: There has been lots of positive and negative criticisms on the influences and effects of animated images on kids in Nigeria without considering the communicative potentials of such medium from our cultural perspectives. Again, many Nigerians may not have the knowledge that there are quality Nigerian local content animation.

Methodology: This paper looks at the perception of computer generated imagery (CGI) in Nigerian animated films. It examines the nature of the application of CGI in popular Nigerian Animated films by analyzing the techniques used and meanings produced from The images constructed to communicate the ideas of the narratives. This paper is anchored on the framework of cognitive semiotic theory and adopts the qualitative research design to investigate the communication of meanings by use of CGI in Malika (2020), the basis for using cognitive semiotic theory in this paper is that CGI are simulated believable images that denote meanings to communicate encoded cultural ideologies to kids within and outside Nigeria. It is hoped that this study would make better appreciation of Nigerian Animated films and encourage Animators to make more.

Findings: The findings in this study, is that, the use of CGI in object and character representation in Nigerian Animated films as regards reality simulates the simulacra nature of a typical African worldview and bring to life a historical antecedent. It submits that CGI boosts the

visual and aural representation of the Nollywood film narratives which allow the viewer to recognize the already established meanings of the codes used in film text.

Unique Contribution to Theory, Practice and Policy: It also recommends that Animation should be used for promotion and preservation of fast fading Igbo cultures.

Keywords: *Computer generated imagery, Animation, Perception, Semiotics, Representat*ion

Introduction

Narrativity through animated images is slowly being utilized in the construct of some socio-cultural ideologies in selected cultures out of the diverse cultures embodied by Nigerian society. Therefore, it cannot be over emphasized that film communicates through cultural representations, as such animated films expantiates the ideological use of film in relaying the cultural essence of the people to a global audience. As such, animated films like any other movie are creative constructs of a film animator whose ideas are geared from socio-cultural perspective. In this regard, Gavin Extence, 2008, p. 15, posits that animated narrative

> ideas could equally well apply to the representation of thought in any artistic medium. The literary stream of consciousness, as it is variously constructed by writers such as James Joyce, Virginia Woolf and Arthur Schnitzler, is, of course, unable to reflect every nuance and detail of 'psychological reality'; instead, it offers an aesthetic reconstruction of thought, providing an insight into the general nature of consciousness and illuminating the specific world-view of a character. Nevertheless, it is still reasonable to suggest that the film medium is particularly adept at recreating the specific qualities of certain mental phenomena, such as dream and memory (just as literature is particularly able to capture other aspects of subjective experience, such as inner monologue). There are, I believe, certain aspects of thought that, because of their primarily visual nature, are inherently 'cinematic', and can, therefore, be conveyed by film in an especially effective, accurate and insightful manner.

The above assertion points towards the application of CGI in creating iconographic characters that are easily understood when viewing animated films. Just as Nollywood narratives are constructs of its socio-cultural ideologies, similarly animated narratives are being explored in promoting the divers rich cultural values of the Nigerian people. As such, Nollywood Igbo

filmakers could include in their productions animated films in other to creatively reconstruct the wrong ideologies of the Igbo worldview, as well as promote and educate young minds within and outside the country, in a way recalling and modernizing the African, Igbo fast fading folktales. In same vein, Alade Samuel Mayowa, 2020, p. 47, x-rays the problem in animated films trying to erode the African folktales which could be why most critcs tend to destructively deconstruct animated films as a wrong influence on kids. He thus states that;

> Culture, education, entertainment, and folklore are intimately connected. Technology, ethnic dynamics, and globalization are now impacting African culture. Today's youth have much affinity for Western culture as it is usually represented by values, ideologies, and philosophies. This is certainly growing with the relentless rise of other cultures such as the Western culture. They are helped by the influx of Western folktales and films that are enhanced by technology in a competitive manner, even if they are not known by people who should preserve them. This study points out why the use of animation should enhance and preserve African folktales, especially Nigerian Yoruba folktales. In reality they seem to have little or no knowledge of the stories because they are more exposed to Western stories like Cinderella than to Anansi, Ijapa ologbon ewe, and so on that are rich in culture without any violence like in much media today.

Therefore, instead of destructively criticizing the narrative ideologies which are mostly products of western ideologies, Critics should look at its communicative potentials in preservation and promotion of cultural ideologies to both distant Africans, especially the Igbo kids and adults who in one way of the other have forgotten their heritages.

    In recent times, there are quite a hand full of animated narrative both short and full length animated films many of which are in 2Ds (two dimensional art form) and very few are of 3Ds (Three dimensional art form). These animated films are not limited to kids alone rather its educative essence and cultural afinity is embracive and includes all ages and generation. Some constructively retells the historical anticidents pictorially which is engaging as well as enlightening. Thus, representations in animated films is constructively created to communicate to all ages, though dependent on the perception of the viewer towards it, as well as the perception of animators in which they constructed the narrative to be construed. Moreover, animated images were used during pandemic and post pandemic period to educate the masses on healthy measures. Likewise, most adverts now apply animated images into real-life action footages with intent to attract the kids. Consequently, Samuel Mayowa 2020, p. 49) corroboratively highlights the importance of animation, in which he points out that;

> Animation is now used for commercial production, advertising, science, education, skill development, and storytelling. Moreso, animation as a tool helps in child development of cognitive skills, ethics, concentration, problem-solving abilities, and philosophy. Similarly,... animation serves two purposes of learning in that it allows beginners to perform more taskssuch asthat relating to the process of acquiring knowledge by the use of reasoning, intuition, or perception, thereby providing them more information that cannot be displayed by static pictures as well as helping children to learn and broaden their thinking capacity.

Thus, animated are not mainly for educational purposes, it helps cognitive skills, ethics, historical annd archeological enlightening. It is also used for advertisement of products of all ages, for instance indomie noodles explored it and it was explored by the Nigerian beweerries to animate the star bottle beer in one of their. Ads. This is affirmed in Fletcher (2018, p. 20) when he posits that,

> Electronic media Advertisements are likely to incorporate elements of concrete "fact" with abstract concepts, for instance this is a picture of the product, and this product will give you freedom and sophistication. New Media writer Andrew Darley speaking of television advertising generally states "the meanings they resonate are abstruse, indeterminate and vaporous" (Darley). This seems like a strange echo of the most successfully provocative experimental work. It is fascinating to consider this level of abstract quality at work in the concretely focused context of advertising actual products.

The manner in which these narratives are structured are not without consideration of the fact that technological medium of recording the creative ideas are tools that warrant an experienced cinematographer, cum animators to handle the creation of iconic anime characters, since it requires a whole lot of persons coming together to harness the ideas conceived by the filmmaker/director. The disparate artists' creative inputs are seen in the synchronization of visual and sound composition of the narratives. The images and sounds assembled communicate lots of meanings based on how the Animators conceived their ideas. As such, his image constructions of codes are pointers to what and how the viewer perceives the narrative.

In the words of Au Kristin C., 2003, p. 9,

> With the development of computer graphics, animations have become more realistic, thus making it easier for audiences to relate to storylines and empathize with characters. In the past, cartoons did not require a realistic element allowed greater flexibility to creative and artistic portrayals of objects, animals, and people. Arguably now, with higher quality computer generated images (CGI), animations could now reach new heights in the portrayal of realism using 3D techniques.

Thus the use of CGI in animated film created more realistic impressions as well as enhanced the image representations for believablity to arouse empathy. The illusion of reality heightens one's imagination and visual perceptions. Therefore, the perception of space and character movement between 2D and 3D animation is determined by environmental elements in which they are constructed. Au Kristin C (2003, p. 9) reiterates that

> 2D animation is defined by elements constructed in a 2D environment while 3D animation by elements constructed in a 3D environment. Modern day animated films have been seen to mix the two forms for the sake of artistic effect, expedited production, and general convenience. Though some modern animations combine the two in the explorative quest to discover new animation forms, few films directly compare the forms to visualize the differences in their perceived qualities. Noticeably, the two animation methods differ in level of detail, dimension, realism, and artistic expression. In terms of lighting, the science of illumination dictates the 3D environment whereas in the 2D environment, lighting is an illusion created by coloring conventions.

The technological advancement has equipped the computer softwares which gives lots of tools that enriches both 2D and 3D animation formats. This advancement is influenced in the detail representational outline of an object or character created. But the realistic imaging as produced from the two formats differs and also dependent on the conceived ideologies of the animator and his technical and artistic application of CGI application. In this regard, David Surman 2003, p. 4, established that;

> Computer generated images have unbalanced how we the audience assess the credibility of cinematic representation;

they shift the position of the film image on its scale between the fantasy and reality. We are no longer able to wholly invest our imaginary in the material 'truth claim' of traditional photography as it was once hypothesised. Just as photography superseded the reality effect of painting, the digital image has ruptured what was once thought to be an image of unquestionable, automatic mimesis. In the post-photographic era of the CGI feature film, the loss of indexicality has meant that the cinematic sense of realism is now authenticated in other ways. For the purposes of clarity – though it may sound like stating the obvious – the CGI feature film is an animated film which is entirely computer generated. In the CGI reality, objects do not pre-exist, and no pro-filmic events take place.

Thus, the application of CGI in animated images tend to have surmounted the sense of realism in animated images. This notwithstanding, reality in these constructed images are conceived from cultural ideologies. In light, Surman 2003, p. 5, reiterates that

Animation artists across Africa have made work that is informed by the cultures of the spaces they operate within and the specific social, economic and political histories of these places. In light of the varied landscapes that impact upon the narratives of animation from this continent, the all-encompassing term 'African animation' is a nomenclature that falls short of describing this diversity. In addition, African animation artists straddle a range of artistic practices and their work exists in diverse genres and formats. These include but are not limited to children's cartoon educational programs on television intended to depict local stories and safeguard languages; drawn caricatured political satire distributed via YouTube as a form of socio-political critique or activism; mixed-media documentary and non-fiction animation, as personal testimony or as a voice for the marginalized, screened at festivals, mobile cinemas, or at exhibitions in galleries; and finally with the onset of digital technologies computer animation as short viral 3D animations that are shared across social networking spaces or computer animation

within games designed to be played on a mobile phone.

Surman reiterates that CGI bridges the gap between psuedo and realism. He buttresses this by explaining Moszkowicz view noted that;

> CGI representation retains some level of index to the real, through motion-capture technologies, and the mapping of digital models directly from sculpted ceramic models. Such indexes function invisibly however, and through they have correspondence, are often exaggeratedupon and altered by the animator/modeller—blurring the indexical nature and undermining its primary correspondence to the 'real'. They do not have the rhetorical truth claim of the (indexically linked) photographic analogue.

The above assertion reaffirms the idea that animation even though its seen as an abstraction and fantasy, it has some elements of indexical relationship to reality. Relatively, animated narratives whether in abstraction or iconically relate to objects and characters by implication audiences often resonate with it. Thus Nollywood filmmakers and Animators should collaborate in creating and fashioning out ideas and style with which to express their thoughts in replicating Nigerian cultural ideologies (especially the Igbo cultural ideologies). Certainly, animated films in its artistic form of communication is a medium through which Nollywood film-makers can make representations of our cultural world view. Based on the mode of film communication, it has its system of sign coding, Objects and Characters within shots reorganization and sound making in synchronization to the moving image. As a language, sound design (music and sound effect) compliment and enhance the iconic characters in animated movies, reflecting some ideologies 'inside'. An ideology of the shots is created by the different angle shots according to the variation of the narrative pattern of the shots. This includes, the way to deal with the relationship of sounds and pictures, the way to connect the shots, colour, lights and shadows into whole movement, coding to our needs. The representation of object and characters could be stylized object and characters or realistic characters, which both features are mimic to identifiable objects or certain human attributed in reality. The triffling issue is there is little or no study on how character animation in Nollywood animated films communicates with little refference to African ideologies.

Cognitivesemiotics studies the relations between signs and language. It is a realist theory that takes facts of the matter- that there are objects of signs- to determine the propositional content. Little wonder, Elsaesser & Heargner (2010, p.) state that "film is of the mental

schemata and cognitive processes which makes it possible for us to understand moving images as representatios." Thus, the main objective of cognitive film semiotics is to construct unobservable underlying structures shared by all films based on semiotic model. Semiotics is generally concerned with the communication of meaning through signs. It focuses on the interrelationship between auditory and visual signs. Its application to literary works stresses the production of meanings from shared conventions and codes; whereas in film, the scope of semiotics goes beyond spoken and written words to systems such as gesture, sounds, looks, etc, in visualized forms. In other words, semiotics is the study of signs of all kinds; what they mean and how they relate to ideas or refer to objects in reality. Therefore, a sign is the smallest single unit of meaning that viewers can decode and which contributes to the overall meaning of a narrative. Thus, film communicates through the aid of signifying tools. Its images are created with the use of natural objects and artificial or simulated objects to express an idea or series of ideas. Every visual message is understood within the cultural context in which the film narrative is created. In other words, observation of the cultural codes, myths, conventions, and ideologies on which a film is rooted are critically considered in the light of meaning making of its story. Applying semiotics to the study of films, benefits the viewer in grasping the meaning of a narrative critically.

The use of Computer generated imagery (CGI) creates visual attractions. The fusion of appropriate computer-generated images (CGI) in animated film narrative either enhances the dramatic tension or temporarily helps the viewers to escape it. This is ascertained in Jae Ryu's view who states that, "since temporal spectacles catalyze the narrative's attraction, audiences temporarily escape from the dramatic tension of the whole diegesis. At the same time, however, there is an instant dramatic connection established between the frame before the tricks and the one that follows, accomplished, paradoxically, by means of psychological reality produced by the spectacle." .Stephen, (1996, p. 31) observes that,

> this tension in classical theory between stressing the ways film either records or reorganizes pro-filmic reality continues in contemporary theory, with the classical formalist emphasis upon the artificiality of cinema structure being absorbed into theories of the apparatus, of psychoanalysis, or of ideology as applied to the cinema. In these cases, cinematic realism is seen as an effect produced by the apparatus or by spectators positioned within the Lacanian Imaginary. Cinematic realism is viewed as a discourse coded for transparency such that the indexicality of photographic realism is replaced by a view of the "reality effect" produced by codes and discourse.

Regardless of the audience's empathy toward the narrative; it focuses on machine-made cinematography and technological spectacle. Thus technology itself operationalized through the camera, is more attractive than main themes generated by the narrative and story. In terms of this technological spectacle, early cinema shares a vein with Hollywood filmmaking today (North, 2001, p. 70). In this wise, the fusion of technologically based images which refers to CGI tends to use indexical signs to project realistic effects that can be decoded by the audience. In this respect, Jae Ryu, (2014, p. 23) states that, "the technology during the period of the early films creates the signification of the reality of the spectacles through reflection of the references, interrupts the audiences' empathy to the whole narrative structure, and at the same time, provides amusement. In addition, during the moment that special effects are used, the psychological narrativization, which can be supported by Bazin's classical realist theory, aids the audiences' understanding of the tricks." Thus, the aim of any effect in any film narrative (including animated films) is to enhance visual meanings and flow of the narrative which stimulates audience emotions. Speindel (2013, p. 5, asserts that,

> narratives and codes are dictated by a desire to make the story readily comprehensible to the audience. This does not mean that techniques and structures are themselves simplistic; rather it means that a sophisticated set of conventions has evolved which aims to guide viewers through the story (in this sense they are 'benevolent'). The techniques are 'transparent' because they seek to keep viewers focused on the story; they are therefore unobtrusive, so that audiences remain absorbed in what is happening, rather than become distracted by how the story is told. Part of the sophistication of Hollywood narratives and techniques lies in their invisibility, in the effort involved in appearing effortless.

Albeit, Prince, (1996, p. 27) states that "the rapid nature of these changes is creating problems for film theory. Because the digital manipulation of images is so novel and the creative possibilities it offers are so unprecedented, its effects on cinematic representation and the viewer's response are poorly understood." In addressing the above view by Stephen Prince, it should be noted that excessive enhancement of a CGI object in the bid to create the illusion of reality sometimes disrupts the motive of applying such images. Thus, Okun and Zwerman, (2010, p. 42) buttressing on the causes of misrepresentation and misunderstanding of the image created with the use of CGI, argue that, "Focusing on the visual effect and trying hard to prove its real has the unfortunate consequence of causing the audience to look at the shot as a visual effects shot and not an emotional shot helping to tell the story. A magician wants to point out his

accomplishment to the audience, but a visual effects artist wants the shot to work in context." Thus, Zahari, Kong , and Abdullah (2013, p. 24) assert that visual effect which are produced from particle from emitter and volumetric light have influenced the audience on the mood that shows Dream and likely to shows Cold Desert and Inside the Water.

This study is a contextual qualitative study on the perception of Computer generated Images CGI in Nigerian made Animated films, using selected Nigerian Animated films, in order to effectively address the research problem and arrive in a verifiable conclusion. In other words, it warrants inductive, holistic, emic, objective and processoriented method used to understand, interpret, describe and develop meanings to the images created with visual effects in Nollywood films. It also adopts APA documentation style for references. The study largely depends on primary and secondary sources. The primary source for this study Roye Okupe.'s *Malika* (2019). With focus on CGI and sound design, there shall be an analysis of the CGI and sound design of the selected film. Secondary sources for the exercise will include textbooks, Magazines, journals, published and unpublished works on the subject(s).

Synopsis of Roye Okupe.'s *Malika* (2019).

The narrative is set in the fifteenth-century West Africa, Warrior Queen (*Malika*) is a fantasy epic that follows the exploits of queen and military commander Malika, who struggles to keep the peace in her ever-expanding empire. Queen Malika in her quest to keep the kingdom of Azaaz, request for a single combat with one his antagonists who thought it was an opportunity for him to win the war. He then asked the queen to select her best fighter to do the battle but the Malika she is to do the fight herself. She thus charged him to fight and won the sword battle by braking his hands and leg. She then receives a visitor whom she chose make an allie. But one of her chiefs seemed to kick against it, suggesting that the right thing should be done which meant that the Queen should kill the King Abaas of Attallah kingdom whom she allied with. She (Queen Malika) refuses and asked Dumbari to leave the palace. Abdull (Queen Malika's head of security) explains that he was not in favour of her alliance with King Abaas, then Queen Malika queries if he prefers her to kill Prince Abbas, but Abdull explains that they should consider all options first. Then, later that night, Queen Malika tiptoes in disguise to test the strength and fighting kills of King Abaas. When Malika over powers Abaas, he asked if she's going to kill a visitor in her palace, just then, queen Malika drops her dagger knife and embrace Abaas kissed him, after revealing that they were married.

Perceptive Representation of Roye Okupe.'s *Malika* (2019).

The Animators constructively borrowing from the historical story of Queen Amina of Zauzau but creatively named the main character Queen Malika. The narrative started with a display of
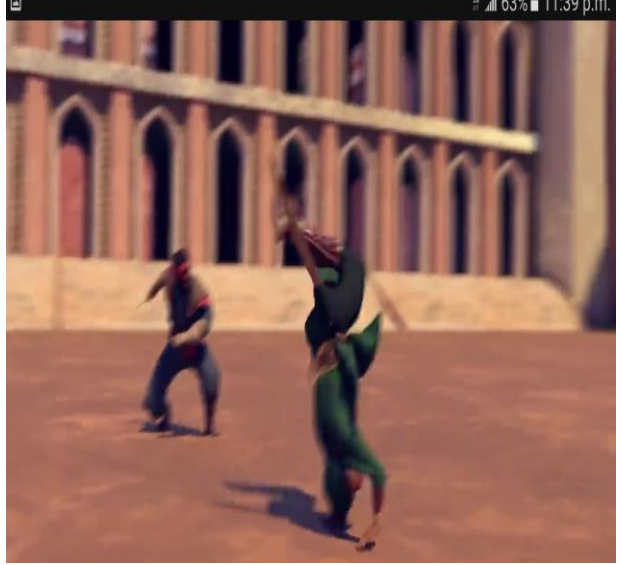
northern map where Azaaz is situated in the map with sounds of war chants. While texts on how the queen united the kingdom through the Chiefs. This itroductory background to the narrative could be likened to the traditional African folklore style of narrativity. For instance, The storyteller introducves the story by saying " ifo hee... and the audience/listners would respond "woor". He goes on to introduce the story by giving a little background of either about the characters or a place where the narrative is situated. Thus, the map places Azaaz and its neighbouring villages. Then, used fade-in effect to lead its audience into the palace of Queen Malika, dollying the rigged camera from a birds eyeview then cuts to a low angle shot of the head guard who was seen discouraging queen Malika as soon as she steps out to the court yard. The entire characters in the narrative are modeled and animated in 3D format. The Animator's use of simulated reality in such that the images mediated the Northern Nigerian cultural ideologies.

Pictorial reading of Roye Okupe.'s Malika (2019).

IMAGES	CGI compositions	Sound effects	Interpretation of images
	The characters are created with the aid of 3D software which	Flute symphonic sound	The features of the characters simulated real life humans and the buildings, sculptural artifact depicts the norther cultural ideologies. Ķ

| | A medium angle shot of Abdull expressing view against Malika going to chat up with Rahz (the threcherous swine). The two characters are modeled and rigged in 3D format replicating a reallife human again, their carriage and movement of their belly while talking simulated the way any human talks and breaths. | | |
| | A close-up shot of Malika and Abdull deliberating of meeting with Rahz. | Flute sound and base drum sounding at intervals. | The close-up shot draws the attention of the viewers to abdull's disapproval of Malika going to meet with Rahz. Where, the background |

			sounds of flute and a base drum signifies war.
	A reverse wide angle shot of Malika expressions against Rahz's antagonistic view of her assuming the mantle of leadership of the people of Azaaz. The CGI simulations showed the rumple linning of Rahz clothings and its textural pattern.		The reverse wide angle shot draws the attention of the viewers to Malika trying to convince Rahz to resist going into battle with her. The shot makes deminishes her status at this point. This suggests Malika stooping low to conquer.
	A medium shot of Malika point her sword towards Rahz while challenging him to a fight		The shot places Queen Malika almost at the same height which could be percieved that both characters are of same might, not minding their physical

			attributes are not of the same size.
	A close-up shot of Malika holding the head of her sword pointed towards Rahz	Dialogue	
	A wide angle shot of Malika sumasulting away from Rahz swinging of his sword against her.		
	Rahz iconic character is rigged to fall to the ground as he clings one of his arms and bent his knee.	In exclamation, he stated my head, my shoulder, my arm,, my knee, my toes.	Rahz's fall symbolizes Malika's triumph over the little moments of battle. The exclamation by Rahz reminds both kids and mature minded about the nursary rhyme, my head,

			my shoulder my knees... .
	King Abaas visits Queen Malika's palace. The king of Attallah. The entire image within the medium-closeup shot are created with the use of CGI. The clothen are rigged to move with his geiculations as he talks to Queen Malika.	Dialogues	This shot through the colour application signifies celebrations with the flamboyant costume as modelled by the animator. Again, the modern day Babariga/danchik i attire worn by Abaas identifies him as a nothern person.
	Dugbari giving his council to Queen Malika. The camera is rigged to capture the green carpet floor, and creamish-brown elevation simulating a	Dialogues	The mise scene in the this flamboyantly shows affluence. The purple coloured costume worn by Dumbari also describes the character as a royalty (A Chief). The entire

	walk way to the throne and some stick lampterns modeled to simulate illuminating tool in the palace.		
	Queen Malika sitting her throne listening and frowning at Dumbari 's council on her decision to accept King of Attallah's allie. The sets are modeled to depict a wealthy royal sit.	Dialogues	The mixture of colours in this shot presents an a rich typical African cultural background. Malika's reaction fecial expression is an indication of her being displeased with Dumbari's council against her allie with the Prince

Conclusion

The use of CG images in animated movies enhances the simulation of realism which often depends on the processes of modelling objects and character imaging as represented and the techniques applied to simulate intended image in order to encode and produce cultural meaning in the narrative. This account for the Animators' perception and his control of the techniques used in the application of CGI in selected Nigerian animated film. The use of CGI in object and character representation of the film Queen Malika as regards reality simulates the simulacra

nature of a typical African worldview and bring to life a historical antecedent. Thus CGI boosts the visual and aural representation of the Nollywood film narratives which allow the viewer to recognize the already established meanings of the codes used in film text.

Recommendations

Based on the findings of this study, this paper suggests that the application of CG images in film narratives (including Animated films) produces heightened illusion of reality signifying character Iconographies, believable environments, mood and tension of the narrative. This paper also suggests that Nollywood filmmakers should venture more into Animated films in other to creatively reconstruct the wrong ideologies of the Igbo worldview, as well as promote and educate young minds within and outside the country, in a way recalling and modernizing the African, especially Igbo fast fading folktales. It further recommends that there is need for deep study in the area of cognitive semiotics of CGI and Visual effects and its synchronized sounds in Nollywood films. Therefore, there is need for film scholars especially film departments in Nigerian Universities to study and research extensively on these area of film studies.

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