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Digital convergence, possessive viewers, and evolving documentary aesthetics

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Abstract

Media consumers' behaviour is shifting due to increased digital activity, the ubiquity of converged digital technologies, and the rise of on-demand platforms. This convergence democratises content production, allowing individuals and communities outside mainstream media to create and share their own narratives, transforming how we consume and interact with digital content. This technological evolution interacts dynamically with aesthetic progressions and viewer expectations. In digital video production, applying multimedia aesthetics involves analysing elements such as light, colour, space, time, motion, sound, and visual narratives. Understanding this triadic interplay helps producers tailor content to emerging audiences, including digitally native generations like Millennials and Generation Z, who are becoming "possessive viewers" with control over their viewing experience and heightened expectations for emotionally captivating and visually engaging content. Researchers have explored the relationship among digital convergence, narrative structures, aesthetic components, and frameworks for analysing these elements within digital narratives, especially in South African contexts. However, the specific influence of digitally convergent tools on the application of visual design in documentary media remains an area that requires further exploration. This conceptual study adopts a constructivist interpretive approach, informed by a critical literature review and guided by selected evaluative criteria across media platforms. Drawing on academic literature, online content, and South African documentaries, it proposes a framework for analysing how digital convergence influences the visual design of documentary media productions. The aim is to support media educators in adapting to the evolving media landscape and to prepare students for future content creation. Additionally, it equips media producers with insights into crafting content that resonates with interactive, digital-native audiences. Integrating emerging technologies and aesthetic strategies into the curriculum prepares students for content creation in the evolving digital media landscape. The conceptual model lays the groundwork for future empirical research, particularly in audience-centred testing within a posthumanist context.

Keywords: Digital convergence, applied media aesthetics, South African documentary

Introduction

Advancements in technology, changing viewer preferences, and the development of aesthetic applications are progressively putting digital convergence and applied media aesthetics at the core of digital production media, including documentaries (Elsaesser 2016, p. 232; Sharp & Bevan-Dye 2014,

p. 86). Technology influences the communication of ideas, which in turn influences the analysis of these changes (Sick & Bröring 2022, p. 3). Consequently, creatives in the South African multimedia industry must adapt the nature of the content produced to deliver on-demand offerings to potential digitally native viewers or consumers (Pramjeeth & Mokoena 2015, p. 22920; Tan 2018). Linked to on-demand content is a growing market for narrative advertisements or documentaries (Dicey 2016; Pramjeeth & Mokoena 2015, pp. 22916 & 22920).

A critical literature review explored these intersections. Given that no single text encompasses all aesthetic or formal qualities, it is necessary to broaden the definition of literature to encompass web articles, journals, books, and informal sources such as blogs, social media, online film schools, documentaries, and YouTube videos for creatives (Bandyopadhyay & Modak 2021, pp. 82–84; van Riper and Fitch 2020). Literature was chosen for relevance to: (1) engagement with digital convergence or aesthetics in documentary and photographic media, (2) applicability to South African and global contexts, and (3) potential to inform pedagogical or analytical frameworks. Sources lacking analytical depth, primarily technical or tutorial, or overly general were excluded. The review concentrated on three themes: the influence of digital convergence on nonfiction, aesthetic uses in digital nonfiction storytelling, and the evolving role of the viewer in content creation and consumption. Agbasimelo (2020); Andreoni, Barnes, Black, and Sturgeon (2021); Bizcommunity (2024); National Film and Video Foundation (2022); and Neha and Singh (2023) highlighted the need for more research to navigate this complex landscape. The researcher's constructivist interpretive approach, based on their experience as a junior lecturer, addresses pedagogical challenges in teaching students to evaluate the formal qualities of productions: (1) analysing works by others and understanding their form; (2) analysing their own work; and (3) determining if they reached a target audience, succeeded in leaving a lasting impact, and communicated meaning through aesthetic and technological choices.

This paper helps media educators adapt to the evolving landscape and prepare students for future content creation by suggesting a theoretical framework. It also equips media producers with insights to engage digital-native audiences. The framework integrates emerging technologies and aesthetics into curricula for dynamic digital media. It discusses relevant research within Digital Convergence and Media Aesthetics. The first section traces the impact of the Industrial Revolutions on technological development, setting the digital stage. The second defines Digital Convergence, reviews South African documentaries, and explores its influence on Millennials and Generation Z. The third addresses technological limits and examines digital convergence's effects on the multimedia industry.

Applied Media Aesthetics includes visual design, which explores aesthetic fields using key visual elements, design principles, visual effects, and the design of narrative structures that focus on narratives and their frameworks. This section defines narrative structure and examines how digitally native viewers have become “possessive viewers” in their control of the viewing experience and the transition to on-demand viewing, influencing production choices and content distribution strategies. Finally, the fourth section provides recommendations and tools to satisfy the needs of digitally native audiences through on-demand content, including a pedagogical approach to analysing productions' aesthetics.

Historical context

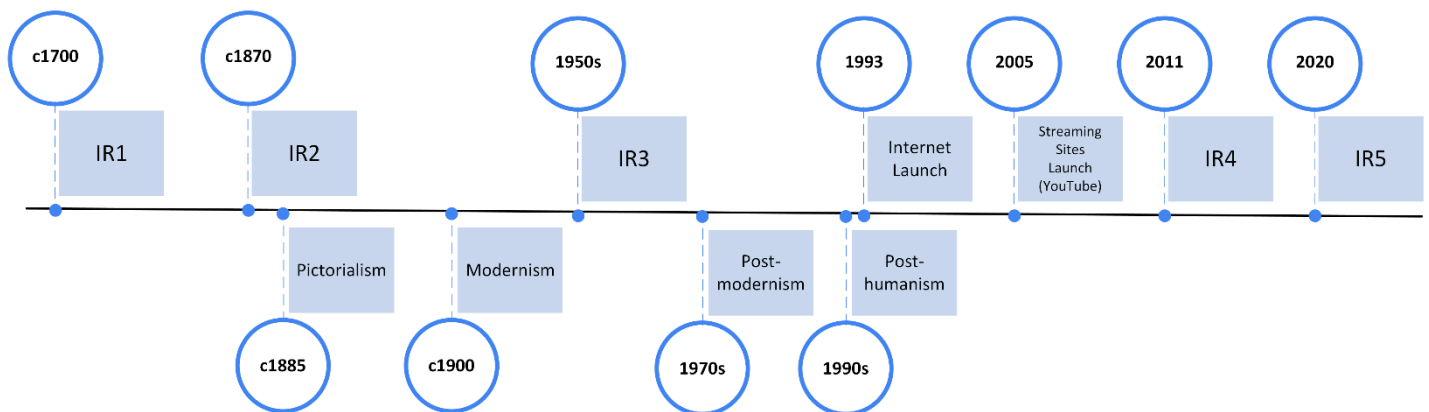


Figure 1: Timeline of industrial revolutions and photographic movements

The Industrial Revolution marked a shift in modern history with new technologies and production changes (Shwab 2016, pp. 11–12). Media technologies and institutions emerged as part of mass societies, a by-product of this revolution (Çöteli 2019, p. 1; Kaul 2012, p. 1). The First Industrial Revolution in Great Britain transitioned from an agrarian to an industrial economy (Shwab 2016, pp. 11–12). The Second Industrial Revolution (IR2) mechanised agriculture introduced new transportation modes, and impacted mass media via the printing press and steam engines (Shwab 2016, pp. 11–12). Pictorialism (1885-1914) developed with IR2, emphasising artistic expression over documentation and employing techniques for painterly effects (Hirsch 2017, pp. 191-215; Rosenblum 2019, pp. 297-339). Modernism in photography emerged between the late 1800s and early 1900s. In contrast to pictorialism, modernism (1880–1920) revolutionised Western culture and artistic expression, focusing on contemporary events and experimental representations, resulting in moral instability and alienation (Hirsch 2017, pp. 217-273; Rosenblum 2019, pp. 393-460).

The Third Industrial Revolution (IR3), starting in the 1950s and 1960s, shifted from mechanical and analogue technology to digital electronics, energy transition, and the internet by 1993 (Cordero 2018; Haradhan 2021, pp. 2-5; Schwab 2016, pp. 11-12). Known as the "Digital Revolution", this era brought significant changes in media, including cable television, digital photography, and converged digital technology (Cordero 2018; Haradhan 2021, pp.2-5; Schwab 2016, pp. 11-12; Rosenblum 2019, pp. 666–667). Postmodernism in Photography arose with IR3, prompting artists to redefine media and prioritise materials and decision-making. Movements like conceptual art, assemblage, environmental art, minimalism, optical art, pop art, and photo-realism explored form, style, and syntax, leading to the "Camp" sensibility. Pop art broke traditional painting norms and adopted commercial imagery, while social rage highlighted the concept of the doomed outsider (Hirsch 2017, pp. 311-569; Rosenblum 2019, pp. 517-669).

The Fourth Industrial Revolution (IR4), introduced in 2011, integrates technologies like nanotechnology, biotechnology, and advanced digital production, creating Industry 4.0 or the Smart Factory (Haradhan 2021, p. 241; Schwab 2016, pp. 11–12). IR4 focuses on digital transformation to connect virtual and physical environments, converting analogue data to digital, enabling online transactions, and digitising activities and services (Kim, Choi, & Lew 2021, pp. 2–3). The Fifth Industrial Revolution (IR5), launched in 2020, combines human intelligence with cognitive computing systems to mass-customise products (Sarfray, Sarfray, Iftikar & Akhund 2021, p. 592). Society 5.0 builds on IR4's

principles to improve life and productivity (Lavopa & Delera 2021; Moll 2022, pp. 45–49; Sarfraz *et al.* 2021, p. 592).

With the digital revolution, Posthumanism has emerged, exploring photography from a non-human-centred perspective. It emphasises relationships between interconnected entities rather than traditional dichotomies like subject-object, organism-environment, and internal-external. This approach focuses on connections without a definitive beginning or end, often examining themes of devastation, apocalypse, and a future devoid of human supremacy (Micali & Pasqualini 2021, p. 133; Wilde & Sylvia 2024, p. 169). This reframing invites a novel perspective for Applied Media Aesthetics that accounts for AI, VR, and machine agency in visual design (Micali & Pasqualini 2021; Wilde & Sylvia 2024). Thus, each revolution marked shifts in technology/cultural production, from analogue to digital to smart factories, directly reshaping visual tools, accessibility, and styles in documentary media as mass-produced equipment became more accessible to consumers (Elsaesser 2016, p. 232; Schwab 2016; Sharp & Bevan-Dye 2014, p. 86; Hirsch 2017; Rosenblum 2019).

Digital transformation emerged from IR3, involving disruptive technologies that boost productivity, social welfare, and value creation (Kim *et al.* 2021, p. 5). It leads to significant changes in various industries, forcing firms to invest in new technologies, models, and processes (Kim *et al.* 2021, p. 8). Disruptive technologies fundamentally change industry, business, and consumer operations (Piloto 2023), often creating new markets that disrupt established competitors (Piloto 2023). Examples include streaming services, personal computers, and smart devices for digitally native audiences (Piloto 2023; Robert 2024).

Digital convergence

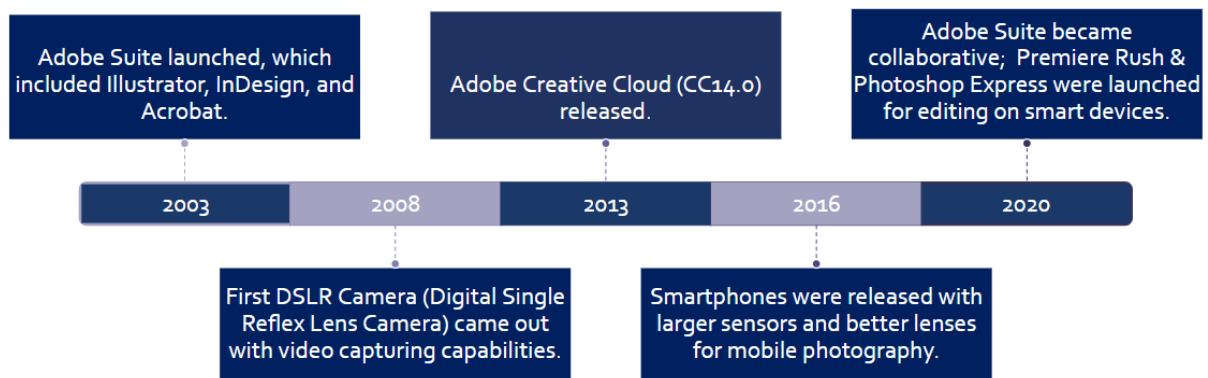


Figure 2: Timeline of digital convergence

Before the Third Industrial Revolution, electronic devices served specific tasks: telephones for communication, computers for work, and cameras for video (Flew 2008). Digital Convergence (DC) allows one device, like a smart device, to perform multiple functions (Flew 2008). Content production has shifted from analogue to digital, with the first DSLR camera featuring video capabilities launching in 2008 (Brabant 2016). The 2003 Adobe Suite, including Illustrator, InDesign, and Acrobat, exemplifies software evolution with DC (Gregersen 2008). As technology advanced, demand for on-demand content grew, including documentaries (Dicey 2016; Pramjeeth & Mokoena 2015, pp. 22916, 22920).

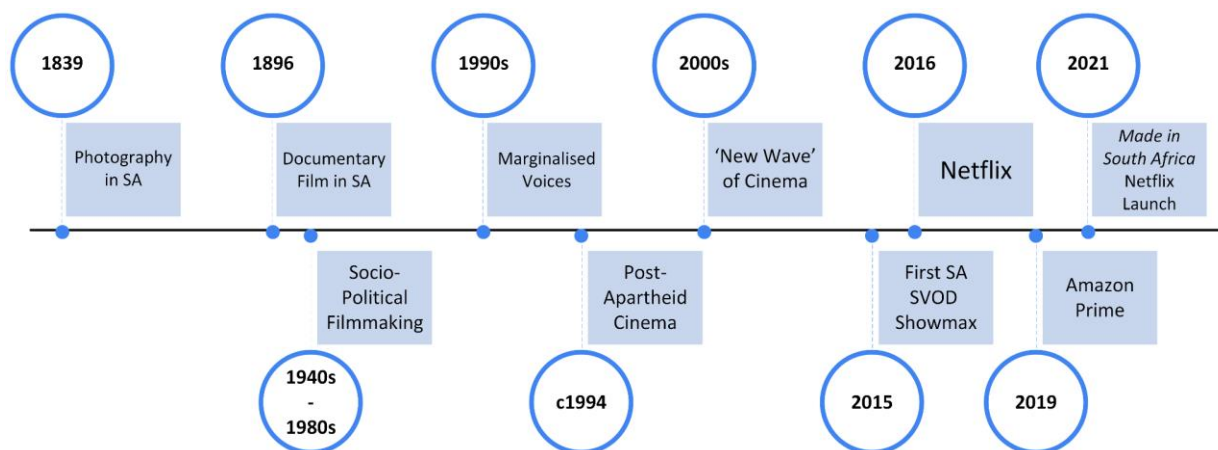


Figure 3: Timeline of South African photography and documentary

Documentary videos encompass diverse moving-image media and various types of documentaries. Bill Nichols identifies six modes: observational, expository, participatory, poetic, performative, and reflexive (Wikipedia 2024). Conversely, Toni de Bromhead outlines five subgenres: linear mode (classic or Hollywood storytelling), generative storytelling, episodic storytelling, poetic storytelling, and hybrid mode (Wikipedia 2024). The media producer's intent and the video's purpose shape documentary definitions (da Canha 2001, p. 7).

South Africa has a rich history in photography and film, with photography starting in 1839 and documentary film in 1896 (Botha 2006b, p. 7; Botha 2011, p. 226; South African History Online 2016). The documentary movement developed around diverse trends influenced by aesthetics, style, content, censorship, funding, distribution, audiences, equipment, and education (Maingard 1995, p. 658). From the 1940s to the 1980s, socio-political filmmaking served as propaganda to persuade audiences about apartheid's merits or oppressive nature (Botha 2006b, p. 10; da Canha 2001, pp. 1, 5-6). In the 1990s, marginalised voices, including LGBTQIA+ individuals, the homeless, and women, emerged in documentaries and short films (Botha 2006b, p. 10). Post-apartheid cinema shifted from political texts to personal narratives, diversifying exploratory and experimental themes such as genre-blurring and questioning fixed constructs (Botha 2011, p. 235; Botha 2006b, p. 12; da Canha 2001, p. 2; Strauss 2019, p. 222).

The film industry thrived in the early 2000s, featuring South African productions at international festivals (Botha 2006b, pp. 10-12). Recently, South African documentaries gained traction as filmmakers sought alternative funding (Strauss 2019, pp. 222-223). The industry embraced experimentation, driven by a 'new wave' of cinema addressing contemporary political disillusionment (Strauss 2019, pp. 222-223). South Africa introduced its first SVOD service, Showmax, in 2015, followed by Netflix in 2016 and Amazon Prime Video in 2019 (Parrot Analytics 2018). A report indicates that internet access in South Africa rose from 48% to 58% during the COVID-19 pandemic.

On 21 September 2021, Netflix launched *Made in South Africa*, featuring over 80 films, documentaries, reality shows, and series for an international audience (IAB South Africa 2021; South African Tourism 2021). With a broader audience, South African content is expected to see increased demand, promoting market growth (Accenture 2019, p. 3-4). Documentary viewership surged; in 2016, Netflix noted that 73% of subscribers watched at least one documentary (Ma, Nardi, Mandraswala, & Vallarino 2021).

Watching on-demand content on various devices encourages digitally native viewers, like Millennials and Generation Z, to adopt a more possessive viewing style (Christie & van den Oever 2018, p. 14; Gillis 2020; Tan 2018). The viewer assumes control or becomes possessive of the narrative or viewing content by zooming in, swiping, pinching, or scrolling to specific areas of their device's screen for educational or entertainment purposes (Christie & van den Oever 2018, p. 14; Tan 2018). Engaging interactively with the content improves the viewing experience, enabling the audience to play a role in shaping the narrative, which is essential in the visual design of documentaries (Christie & van den Oever 2018, p. 14).

Visual design

Most documentaries have a unique design style or 'feel', relying on visual communication and media aesthetics. Aesthetics shape viewers' perceptions of any message from digital media producers (Lester 2020; Smith, Moriarty, Barbatsis & Kenny 2005, p. 3; Zettl 2017, p. 3,5).

Therefore, Applied Media Aesthetics (AMA) and the Camera Picture must be defined within this paper's interpretivist constructivist framework. Four contextual elements of aesthetics facilitate the organisation and examination of each component while maintaining an overview of how these elements contextually interact (Zettl 2017, p. xxxiv).

While these fields remain constant, their applications evolve alongside technology (Zettl 2017, p. xxxiv). Zettl expanded the areas of aesthetic fields to include digital video, 2D and 3D digital cinema, and virtual reality (Zettl 2017, p. xxxiv). Thus, Applied Media Aesthetics extend beyond merely appreciating existing works; they also pertain to works in progress by any creator (Zettl 2017, p. 4-5).

A camera picture is a unique image representing both still and moving pictures, as moving images are illusions created by persistence of vision due to frame rate (Lannom 2025; Maio 2020; Zettl 2017, pp. 271-274). It can be defined as an artefact showcasing a subject's appearance in front of the lens (Szarkowski 2007, pp. 6-8). A camera picture is captured by an optical-mechanical or electronic device, which comprises impressions left by light vibrations reflected off objects and directed through a lens onto light-sensitive material (LaCombe 2017; Toshiba Teli Corporation 2025).

Thus, it captures an image of the 'reality' of what was in front of the lens and evolves into a symbol when considering its form (Bate 2020, pp. 11-33; Szarkowski 2007, pp. 6-8). The Camera Picture uniquely combines science and art, creating an artefact that is both a record and an expression (Kench 2021; Ledin & Machin 2018, pp. 53-62; Photo Pedagogy, S.a.). Professionals aim to provoke reactions through the picture, conveying ideas, concepts, or emotions. Thus, the image's content is one aspect of a structured visual communication act (Ledin & Machin 2018, pp. 53-62; Photo Pedagogy s.a.; Zettl 2017, pp. 4-5).

The professional practitioner organises the camera picture's 'meaning' (form) through (1) scientific principles of technology, (2) applied media aesthetics, and (3) a clear concept/message. This structured approach aims for a desired visual effect using elimination, delineation, clarification, intensification, and interpretation (Kench 2021; Photo Pedagogy s.a.; Zettl 2017, pp. 4-5).

Thus, the camera picture fuses creative 'vision', technical expertise, aesthetic knowledge, and an understanding of technology to engage a target audience. This diverse approach to visual storytelling is crucial for building stronger connections with the audience, ultimately evolving the narrative structure (Christie & van den Over 2018, p. 14-15).

Narrative structure

To entertain digitally native viewers, narratives are becoming more complex, encouraging interactive engagement (Christie & van den Over 2018, p. 14-15; Fulwiler & Middleton 2012, p. 43).

Narrative refers to the story itself, including the events and their telling, while Narrative Structure is vital for understanding a narrative and visually illustrating its dramatic structure (Brodowicz 2024; Wang *et al.* 2007, pp. 606-607). Popular pictorial structures include the Three-Act Structure (Figure 4) and Freytag's Pyramid (Figure 5) (Maio 2019; Welton 2014).

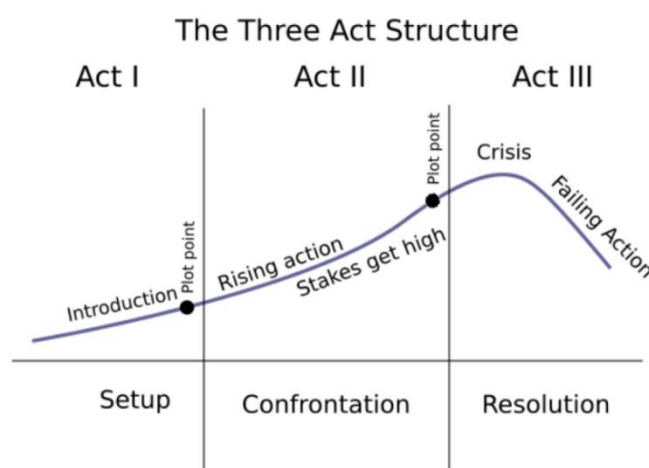


Figure 4: The tree-act structure (Zhou Zhou 2022)

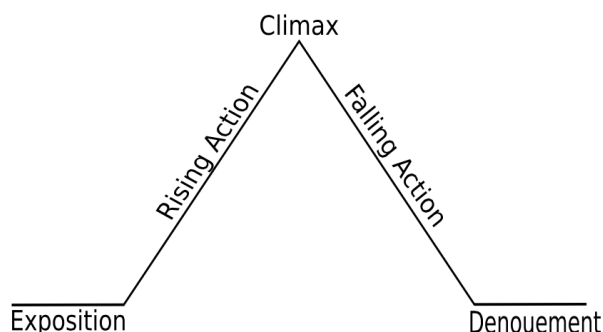


Figure 5: Freytag's pyramid (Campbell 2014)

This paper examines narrative structure as a design element and serves as a framework for assessing a story's visual exposition through media aesthetics (Block 2021, pp. 259-287). Visual structure signifies design over time and can follow the Three-Act Structure, which may vary based on narrative development (Maio 2019). The Three-Act Structure is divided into: ACT I (beginning), ACT II (main body with rising action leading to the climax), and ACT III (climax and conclusion). These acts typically follow the ratios: 25% Introduction, 50% Body, and 25% Conclusion. However, narratives may have a longer introduction (50%) or a shorter one (15%), which adjusts the ratios of the other acts (Maio 2019). Aesthetics may also be tracked or plotted according to a visual structure, as illustrated in Figure 6 (Block 2021, pp. 259-287).

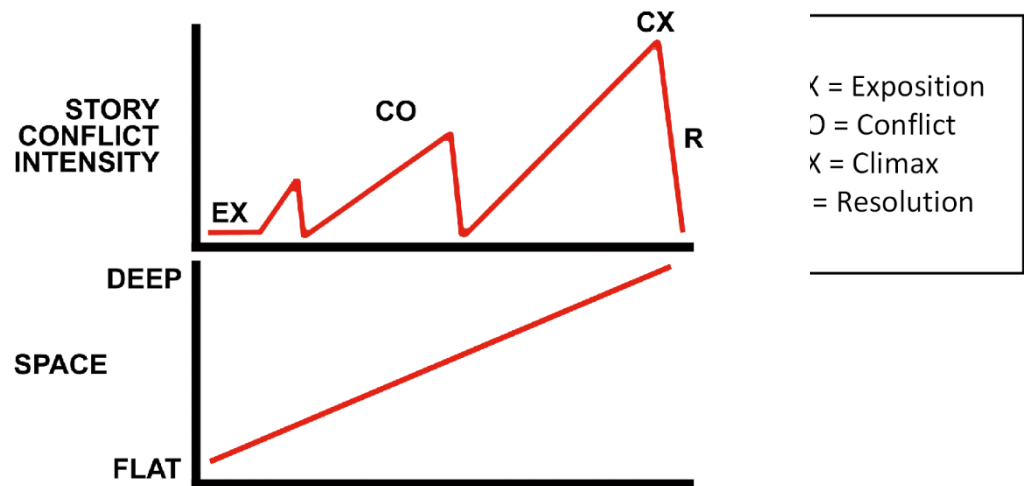


Figure 6: The visual structure Graph Choice 2: The progression (Block 2021, p. 266)

Thus, plotting narrative structure and aesthetics on graphs (as seen in Figures 4 and 6) serves as a valuable tool for determining how events rise and fall within a narrative (Block 2021, p. 266; Maio 2019). Combining the two graphs may be beneficial for tracking how aesthetics rise and fall following events in a narrative as changes occur over time (Zettl 2017, p. 127, 247). These graphs could also be utilised as part of a Formal Analysis with a proposed framework.

Results and discussion

A Formal Visual Analysis pertains to any art form across historical periods (Franco 2019, p. 187). This paper and its digital products incorporate elements from Zettl's work (2013; 2017) in Applied Media Aesthetics. The researcher asserts that four essential contextual elements related to aesthetics will be explored: lighting, colour, space, time, motion, sound, and visual narrative/editing. Narrative editing shapes the story's structure. Below (Figure 7) is a proposed flowchart for extracting aesthetic fields; the first analytic field for the documentary is Aesthetic Fields Extraction, identifying visual design aspects through Zettl's lens. Keyframes/shots (with the same aesthetic style) must be determined.

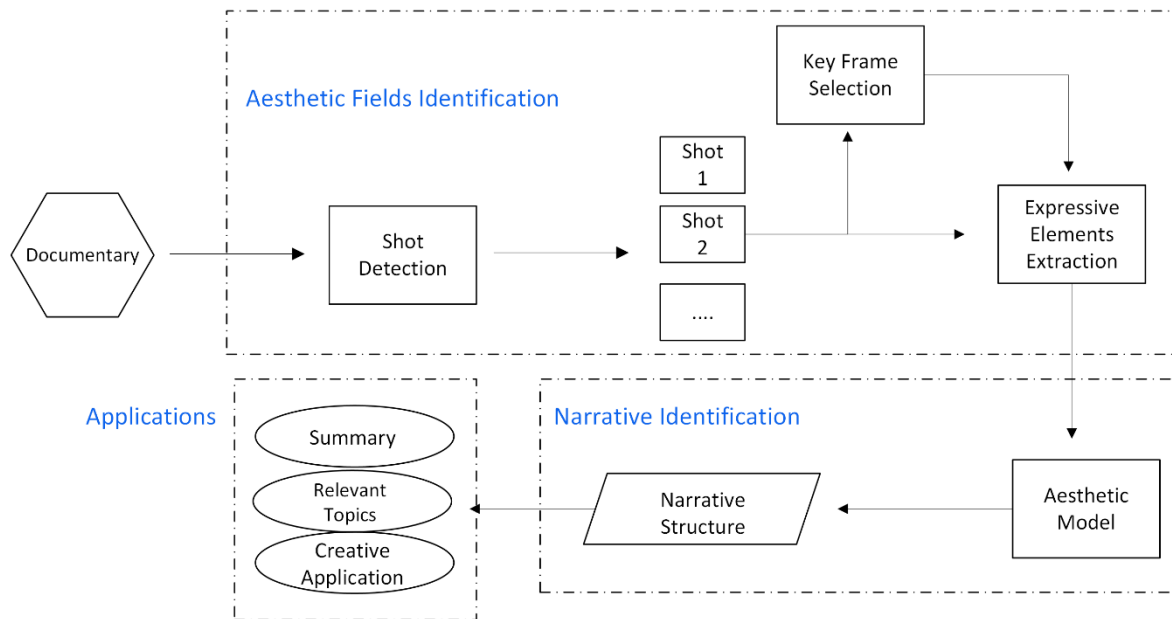


Figure 7: Flowchart of proposed research algorithm (Wang et al. 2007, p. 608)

The AMA fields' characteristics, context, and influences are analysed based on their visibility in the identified keyframes. The process includes three stages: (1) identifying key shots and their visual design; (2) examining all aesthetic fields in the documentary; and (3) structural analysis to assess aesthetic evolution over time, reviewing the documentary's various aspects and aesthetic domains (Zettl 2017, pp. xxxiv, 127, 247). However, the primary focus will be on the interplay of auditory and visual elements and changes in the visuals. Any analysis stage involving the extraction of aesthetics may be analysed using the following proposed method, which examines each aesthetic field.

Light entails inner orientational functions (mood and atmosphere from falloff and key light type), key light positions (above or below eye level), predictive lighting (mood changes), lighting instruments as agents (visible sources), and techniques (chiaroscuro and flat lighting). (Brown 2016, pp. 48-56; Wang et al. 2007, p.609; Zettl 2017, pp. 30-34, 37-49). Colour involves three attributes: hue (colour), saturation (purity), and value (brightness), influencing energy and the perception of warmth or coolness, as well as tonal range and contrast (Wang et al. 2007, pp. 609; Zettl 2017, pp. 55-56, 68-83).

Based on composition, space utilisation focuses on element placement, size consistency, image size, frames within frames, and balance principles. (Brown 2016, pp. 14, 60-96; Freeman 2007, pp. 9-31; Zettl 2017, pp. 87-174). Time entails objective time (clock time) and subjective time (psychological 'felt time') (Zettl 2017, pp. 251-256). Motion is assessed through primary motion (character and object movements), secondary motion (camera movements like panning or zooming), and tertiary motion (editing effects like fade-ins and jump cuts) (Wang et al. 2007, pp. 609-610; Zettl 2017, pp. 295-307).

Techniques for manipulating motion include adjusting camera settings, editing to alter speed, and synthesising motion in post-production, like the Ken Burns Effect (Niklaus, Mai, Yang & Liu 2019, pp. 184; Zettl 2017, pp. 280-284). Sound involves literal sound (conveying meaning) and non-literal sound (establishing ambiguity), serving informational functions (dialogue, narration), structural functions (rhythm, sound perspective), outer orientational functions (space, time), and inner orientational functions (mood, energy) (Zettl 2017, pp. 231-328).

Visual narrative and editing are analysed through continuity editing, which covers space and vectors, and complexity editing, which juxtaposes separate event images. This will incorporate transitions, sequences, montage, colour, tonal contrast and range, and interview style (Bowen 2018, pp. 85-169; Zettl 2017, pp. 370-409). Below (Figure 8) proposes the fields for the expressive elements (visual design aesthetics) extraction:

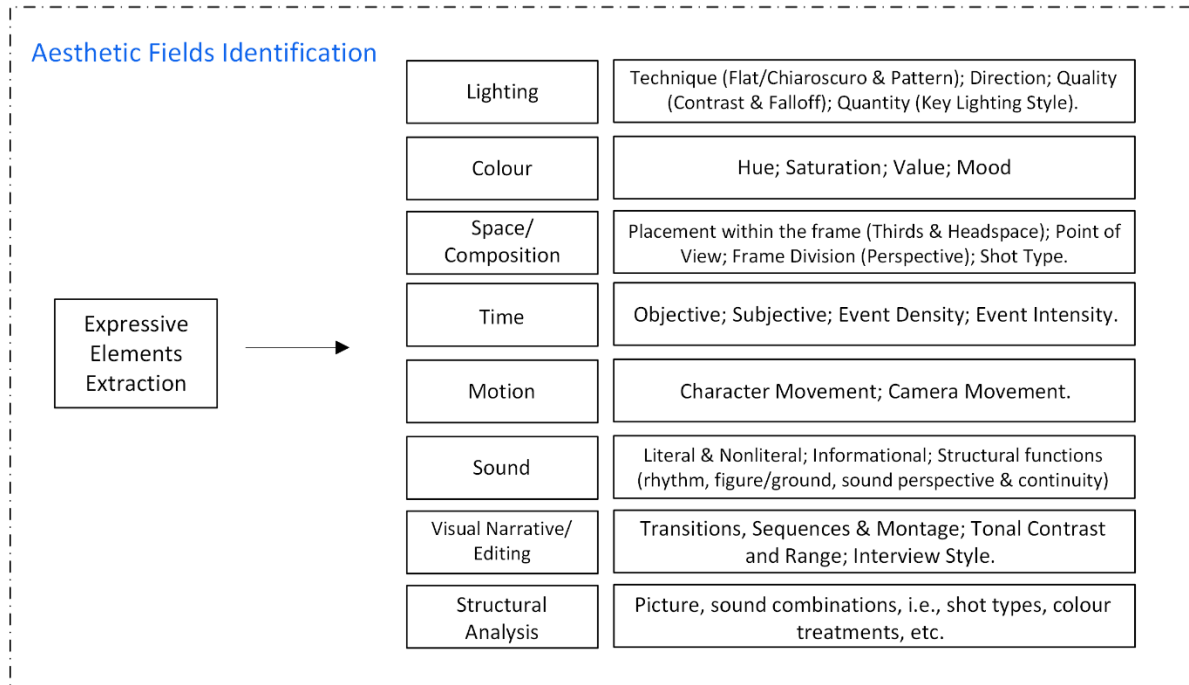


Figure 8: Aesthetic fields application and expressive elements extraction fields (Wang et al. 2007, p. 608)

The aesthetic model will facilitate narrative extraction by identifying the documentary, narrative structure, and character types, as well as charting story and visual progression by making use of the methods discussed under *Narrative Structure*. Below, Figure 9 illustrates the fields for identifying narrative structure:

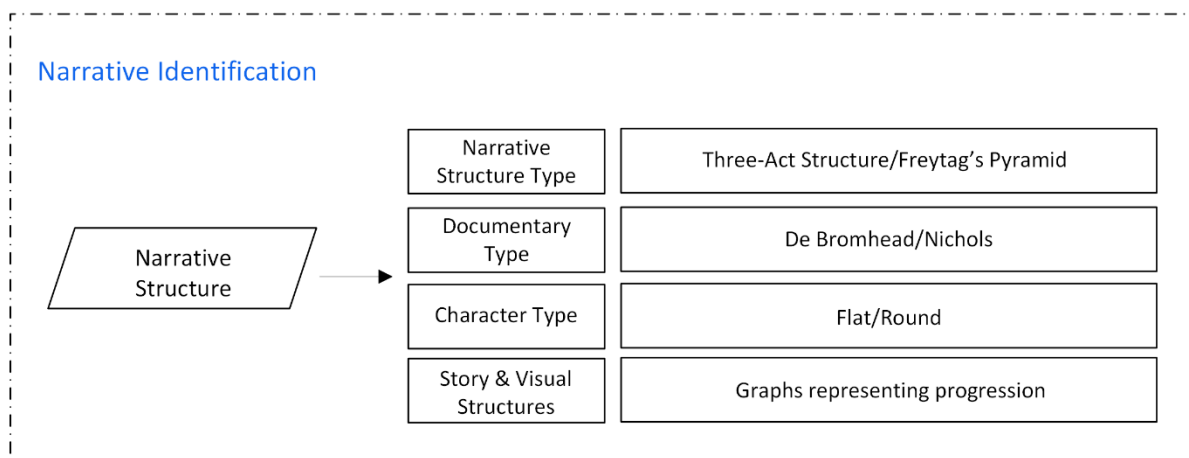


Figure 9: Narrative identification and narrative structure fields (Wang et al. 2007, p. 608)

Based on Wang *et al.*'s flow chart (2007, p. 608), findings from a selected film can enhance high-level video applications using DVD chapters and information (Wang *et al.* 2007, p. 612). This model suits video applications since analysed character portraits are not in DVD form, suggesting their applicability to any production. The flowchart lists applications such as: Summary, Relevant Topics, and Creative Application. Summary encompasses the main findings. Relevant Topics may refer to key points that inspire exploration. Creative Application involves applying key points practically.

This model enhances digital production analyses by indicating which applied media aesthetics (AMA) features influence audiences and how directors manipulate expressive AMA elements for visual or aural appeal (Wang *et al.* 2007, p. 606; Zettl 2017, p. xxiii). It also allows examination of individual aesthetic elements while providing an overview of their contextual interactions within a digital production (Zettl 2017, p. xxxiv).

Therefore, students should apply AMA and the concept of camera imagery by: (1) analysing the works of others to understand form, (2) reflecting on their own productions, and (3) evaluating whether their productions would evoke an emotional response in a target audience through their aesthetic and technological choices.

This framework is useful for analysing media production; it allows producers and students to assess how digital convergence alters expressive methods in locally produced documentaries. Utilising the proposed model can uncover how converged technologies may enhance creativity and challenge creators to align aesthetic goals with technological changes in a rapidly evolving media landscape.

Conclusion

In conclusion, technological advancements, digital convergence, and widespread smart devices have greatly disrupted multimedia paradigms, particularly in creating and consuming documentary productions.

Smart devices provide a platform for viewing content across multiple devices or screens, shaping technological and aesthetic applications and transforming how narratives are crafted, delivered, and experienced. The digitally native viewer expects emotionally compelling and visually captivating content.

This paper introduces a theoretical media aesthetics framework for analysing South African documentaries. It encourages critical reflection and creative practice by highlighting the interconnected roles of the Applied Media Aesthetic fields. When used in media education, or the analysis of media productions, it helps students evaluate and apply media aesthetics and camera concepts in on-demand content, aligning with industry trends and satisfying digitally native possessive viewers. This model enhances visual literacy, essential in today's interactive and converged media environment. Once applied to case studies in the researcher's dissertation, the validity of the framework may reveal/encourage further development.

The proposed model can also be adapted for other forms of digital production, such as VR and AR. In this context, it offers potential for integration with AI-assisted tools in visual storytelling and content analysis. Therefore, this paper encourages further research on these topics within the South African multimedia industry and in other regions. While the framework remains conceptual, it needs empirical testing with audience-centred data, particularly in a posthumanist context, to validate its usefulness and refine its analytical criteria for wider applications.

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