Keeping Watch of Time: The Temporal Impact of the Digital in Cinema

Humans are fundamentally analog creatures…*Being* in digital time differs from analog time in that events in digital time exist without an event horizon. Digital time occurs in sharp breaks and contrasts from one state to another without the flow of analog time, such as the slow procession of a sunset or the transition from a warm summer evening to a chilly night. What if we aged in a non-linear manner, jumping from infancy to late life and back to pubescence in a manner of seconds or minutes, days, or centuries?

> Timothy Jackson contrasting non-digital with digital temporalities in "Towards a New Media Aesthetic" (349).

INTRODUCTION

What do the terms *digital filmmaking* and *digital film* mean? Were I to ask myself this question in an internal dialogue, I would reply that I assume them to be two separate concepts with limitless possible incarnations. The former can vary from being a practice (e.g. filmmaking with a DV camera) to a film style (e.g. the Dogme 95 movement); the latter from an intangible, audio-visually perceptible construct (e.g. film narrative) to a concrete object (e.g. digital videotape). I would further elaborate that both terms fall under the general classification *digital cinema*. However, in relating the notion of time to the *digital cinema* rubric, my definitions of *digital filmmaking* and *digital film* grow more precise: while the first concept takes the shape of digital non-linear editing (NLE), the second embodies a film narrative replete with digital special effects (SFX).

By linking these two concepts to film spectatorship (i.e. an audience's reception of a film narrative) and film craftsmanship (i.e. the craft of suturing together film sequences), I want to demonstrate, through this paper, that digital technology's impact on time within the cinematic realm has been promoting two concurrent phenomena, over the last decade. First, the digital, in the form of overt and covert digital SFX inherent within a film narrative, has been influencing movie spectators' direct relationship to narrative time and space. Simultaneously, it has, in the form of digital NLE, been leading to the rise of theoretical misconceptions about film editing's effect on thematic coherence, human agency, and film aesthetic, vis-à-vis narrative chronology.

Within my analysis of the spectatorship-targeted phenomenon, I will address three issues: (1) my conceptualization of the terms *overt digital SFX* and *covert digital SFX*; (2) the link between overt digital SFX, the disruption of temporality through spatiality, and precognitive audience reception; (3) the relationship between covert digital SFX, the perpetuation of temporality (rather than spatiality), and cognitive viewing responses; and (4) filmmakers' possible motives for eliciting spectators' precognitive or cognitive reactions.

Within my examination of the craftsmanship-oriented phenomenon, I will problematize a hypothetical theoretical discourse centred on time's relation to digital NLE, and based on the argument that digital NLE inherently beget atemporal, fragmented film narratives. To counter this conjectural discourse, I will refute this argument as well as the two assumption on which it rests: (i) the digital practice invariably makes film editors susceptible to non-chronological work processes reflected in their on-screen editing styles; and (ii) non-linear film narratives have been challenging classical narrative continuity's reign as the standard editing trope in conventional films. Lastly, I will challenge the discourse's possible claim that digital NLE may be encouraging viewers to privilege incoherent, non-sequential narratives as "the norm."

I. FILM SPECTATORSHIP

1. CONCEPTUALIZATION OF THE TERMS *OVERT* AND *COVERT DIGITAL SFX*

According to cultural theorist Michele Pierson, the early to mid-1990s was the era during which digital special effects grew to be the centre of attraction among Hollywood filmmakers and the consuming public (29). However, I posit that this intense preoccupation with digital SFX did not belong solely to the Hollywood film industry and movie patrons of that era. In contrast, it became – and has continued to be – a major topic of analysis among numerous film theorists, including Angela Ndalianis ("Frenzy" 2001; "Special Effects" 2001), Roger Beebes (2001), Paul Young (1999), Wheeler W. Dixon (1995-6), and Lev Manovich (1999).

During the time that I spent researching these authors' respective works, I became aware of a distinction existing between *overt digital SFX*, digital SFX visibly and audibly apparent in a film narrative, and *covert digital SFX*, digital SFX audio-visually unnoticeable in any given diegesis. Searching for a common thread unifying the studies by Ndalianis, Beebes, and Young, I realized that all three works broach the notion of a digital film in relation to overt digital SFX (e.g. morphing; 2D/3D animation effects) found in films classifiable as science-fiction, fantasy, and/or futuristic – genres renowned for their association with computer-generated post-production effects. While Ndalianis's print article ("Special Effects" 2001) explores, among other things, the morphing techniques in the sci-fi thriller *Terminator 2: Judgement Day (T2)* (1991) and the computer-animated dinosaurs in the children fantasy *Jurassic Park* (1993), her web article ("Frenzy" 2001) investigates hyper-kinetic kung fu choreography in *The Matrix*'s futuristic world (1999). Similarly, Beebes's article probes *T2*'s morphing technology, while Young's work focuses, to some degree, on animated computer graphics in the sci-fi horror film

The Lawnmower Man (1992). The significance behind these essays' cinematic examples is that they are bearers of *overt digital SFX moments*, moments whose digitally-mediated audio-visual artifice – whether it be an object (e.g. a walking, breathing dinosaur), an action (e.g. hyperkinetic kung fu), or gimmick (e.g. morphing) – is obvious to viewers.

I came to formulate the *covert digital SFX* concept after pinpointing the common link tying the separate works by Dixon and Manovich. This link constitutes the notion that a digital film does not only have to refer to a film narrative exuding overtly visible and/or audible digital SFX but also to that whose digital SFX are – or aim to be – aurally/visually undetectable. Both Dixon's and Manovich's individual essays allude extensively to *Forrest Gump* (1994), a feel-good drama in which numerous scenes contain objects and individuals that/who appear to be "straightforwardly photographed" but, in reality, are composed of numerous layers of "digital effects work" (Dixon 56). These include a white feather flying continuously in the opening scene, and thousands of participants gathered for a peace protest at Washington's Reflecting Pool in a middle scene. By concealing the digital manipulation needed to animate the feather's flight, or bring to life droves of peace activists, *Forrest Gump*'s filmmaking team aims to pass such constructions off as what we audio-visually perceive them to be – an actual feather in motion and actual people in congregation.

2. OVERT DIGITAL SFX SCENES' SPATIAL DISRUPTION OF TEMPORALITY AND PRECOGNITIVE AUDIENCE RECEPTION

It may seem tempting to refer to a film employing numerous overt digital SFX as "an overt digital film narrative," and to a film utilizing covert digital SFX as a "covert digital film narrative." However, I hesitate from pursuing this line of reasoning, since it is possible for films to combine both types of effects. Nevertheless, I am arguing that the purpose behind an overt digital SFX moment is different from that of its covert counterpart. To elaborate on the "overt-covert digital SFX moment" distinction, I must discuss it in the context of Yvonne Spielmann's theory that spatially-oriented "collage clusters" disrupt temporally-driven "narrative montage" (139). Since it makes extensive use of both overt and covert digital SFX, *The Fellowship of the Ring* (2001), the first part of the epic trilogy, serves as an appropriate audio-visual point of reference, for this analysis.

While I interpret Spielmann's spatially-oriented collage clusters to represent filmic moments containing overt digital SFX, I equate narrative montage with a mainstream film's

chronological, plot-driven storyline or narrative. This storyline/narrative is itself controlled by a temporality or continuous pacing whose main objective is to progress forward as efficiently as possible in order to arrive at a specific climax. However, as the function of an overt digital moment is to overwhelm spectators audio-visually, it encourages us to react to it at a *pre-critical* / *affective* / *precognitive* / *sensorial* level, rather than at a *cognitive* / *critical* level.[1] By so doing, it momentarily disrupts narrative temporality.

For instance, the *Fellowship of the Ring*'s temporally progressive dominant storyline focuses on a nine-member fellowship's journey toward the mountain of Mordor, where the members intend, upon (climactic) arrival, to destroy a ring with the absolute power to render evil triumphant over goodness. Throughout the film, moments drawing attention to the film's use of overtly visible and audible digital SFX interrupt the narrative's linear trajectory. Such moments include those inviting spectators to be wowed by a gigantic computer-generated cave troll battling the brotherhood in the Mines of Moria, or by the enormous digitally-constructed fiery demon, Balrog, fighting the wizard Gandalf, on the Bridge of Khazad-Dum. At these instances, the audio-visual spectacle (e.g. each beast's mammoth presence, intricate mannerisms, and bestial roar) created by digital SFX, distracts us from concentrating on the main plot (i.e. the journey to Mordor) and coaxes us to respond to the digital artifice, at a precognitive or sensorial level. In other words, although we, through logic, are aware that the spectacle we are audio-visually perceiving is obviously "fake" or "digitally constructed," we nonetheless abandon any desire to rationalize over how it fits into the storyline and choose, instead, to enjoy its stimulation of our audio-visual senses. If we conceptualize these moments as spaces that momentarily interfere with narrative progression or that distract us temporarily from it, these instances, in a figurative sense, make "time stand still" for us and therefore represent spatialities that disrupt temporality, in relationship to spectatorship.

3. COVERT DIGITAL SPECIAL EFFECTS, PERPETUATION OF TEMPORALITY, AND COGNITIVE VIEWING RESPONSES

Whereas overt digital SFX moments can stand for spatialities that infringe on narrative progression and inspire spectators' precritical reaction, covert digital film moments, moments concealing the filmmaker's reliance on image and sound digital SFX, in direct contrast, privilege linear temporality over spatiality and reinforce critical viewing responses. For an example, I refer to the *Fellowship of the Ring's* battle sequence wherein elves and men, in the name of goodness,

battle Sauron's army on the plains of Mount Doom. Within this sequence exist brief shots wherein Elf King Elrond lines up beside and before his militia, constituting hundreds of elf soldiers. These moments conceal the fact that, except for the actor playing Elrond (i.e. Hugo Weaving) and the dozen or so extras beside or behind him, the majority of the soldiers in the background are digitally generated. By passing off this army of "synthespians" as real people, these moments attempt to convince us that we are watching a plethora of actual individuals at war. These instances therefore serve as latent spaces of audio-visual artifice that reinforce, rather than interrupt with, the plot's temporally progressive movement. By concealing the artifice, they prevent us from being distracted by it, and, in this way, allow us to maintain our attention on the battle's connection to the main story (e.g. the battle's function as the catalyst triggering the fellowship's journey towards Mordor). By concentrating on story-oriented elements, such as the outcome of the battle, we privilege reason over ineffable sensations to process what we see and hear. In this way, we react at a cognitive rather than precognitive level.

4. FILMMAKERS' MOTIVES FOR PROMOTING PRECOGNITIVE AND COGNITIVE VIEWING RESPONSES

For filmmakers, including *The Fellowship of the Ring*'s Peter Jackson, who employ overt digital SFX within their narratives, what might be the intention for inciting an audience's precognitive response? One plausible motive is their desire to draw spectators into a *two-pronged relationship of astonishment* with the moment presenting such effects. While the first relationship's aim is to astonish to cultivate pleasure, the latter's objective is to astonish to inspire admiration (Ndalianis "Special Effects" 260). Filmmakers may wish to so amaze us with the *fictionalized realism* of the entity/action/technique generated by overt digital SFX to the point that we are sensorially impressed by the audio-visual artifice's interruption into the narrative, and are consequently entertained.[2] Simultaneously, filmmakers may want to enthral us with overt digital SFX moments to the extent that we wonder about what post-production process could generate this fictionally realistic audio-visual spectacle. We members of the mainstream movie-watching public have been exposed to enough digital SFX-ridden films to be able to discern "good" SFX from "bad" ones. In such cases, our taste barometer gauges "good" and "bad" in relation to how close the SFX comes to appearing realistic for this make-believe world. For this reason, a filmmaker's ability to so excite us to the point that we are compelled to exclaiming: "Wow! How did they make that [e.g. creature/stunt/action] look so real [i.e. for its fictional environment]?"

would be confirmation of the film's successful manifestation of digital technology. It, for instance, would testify to the fact that the filmmaker's creative ingenuity and his/her production team's technical talents, in conjunction with advancements in computer-based technology, have managed to be on par with, or even to outdo the technological brilliance responsible for fictionalized realism in previously-acclaimed digital (and non-digital) SFX-laden films.

However, one likely reason that filmmakers, including Jackson, employ covert digital SFX to sustain an audience's cognitive response is to promote the *illusion of cinematographic possibility*. They utilize covert digital SFX to deceive spectators into assuming that the moment containing the effects was filmed *as is* and was not manipulated by digital SFX. Since we take for granted the idea that it is technically possible for a cinematographer to capture such moments without blue screen/CGI intervention, we consequently conclude that they – regardless of whether they look spectacular – exist mainly to carry forward the storyline. For instance, within *The Fellowship of the Ring*'s Mount Doom battle sequence, the brief shots of Elf King Elrond in line with numerous synthespian soldiers, deceive us into thinking that hundreds of actual human extras stand around him. We assume that with a film budget large enough to employ numerous extras, it is conceivable that Jackson shot this instance without computer-based post-production technology. Since these fleeting moments do not draw attention to their digital artifice, they do not distract us from the narrative. As a result, we treat them as moments reinforcing and bringing us closer to the main storyline – the journey to Mordor.

II. FILM CRAFTSMANSHIP

Filmmakers and film editors commonly interchange the term *digital film editing* with *digital non-linear editing*. Therefore someone interested in developing a theoretical discourse about time's relation to computer-based film editing may be inclined to hypothesize that the latter expression, by virtue of its *non-linear* middle name, is increasing the presence of non-chronological, choppy visual editing styles in mainstream Hollywood films. Pointing to the possible existence of a theoretical discourse based on the aforementioned argument, cultural theorist Michele Pierson posits: "There is certainly a case for arguing that digital [film] editing has…accelerated the breakdown of continuity editing in recent years: fragmenting Hollywood narratives into a series of ever more discrete visual images and shocks" (34).

In response to Pierson's statement, I contend that there also exists a case for refuting this very argument, since it is founded on two questionable assumptions, the former founded on the

latter. The first is that, since the early 1990s, the era in which American film editors began to engage more frequently with computer editing software to cut mainstream Hollywood films, digital NLE has been encouraging them to work in a non-temporal manner and to construct conventional film narratives reflective of this work ethic. Although Pierson herself does not claim that digital NLE is exclusively responsible for the influx of fragmented, non-sequential storylines after the early 1990s, she nevertheless does not dismiss the notion that, for other analysts, it may be accountable, to some extent:

> More generally…the editing of Hollywood films is much less obviously motivated by the desire to maintain visual and narrative continuity than it was even a decade ago [i.e. the 1980s]. The transition from mechanical to electronic editing is clearly not the sole determining factor in this process. But if the defining features of digital linear systems do not lend themselves particularly well to the kind of linear, sequential thought that editing for continuity demands from editors, nor can it be considered inconsequential (ibid).

Through Pierson's second statement, the second dubious assumption becomes evident. It supposes that, before the early 1990s, non-digital film editing maintained the "continuity editing style" marked by fluid visual continuity (e.g. smooth transitions from one scene to the next, chronological and visually unjarring cuts in a sequence, etc). Presumably such a style had dominated *all* types of film narratives, in various cultures, from the advent of silent cinema in 1890s France till early 1990s Hollywood.

An argument based on these two aforementioned assumptions is analytically unconvincing for three reasons. First, I, as an editor, can create a film narrative whose images appear chronologically incoherent, abrupt, and disjointed, regardless of what type of editing format is employed. Second, the assumption that, before the early 1990s, Hollywood films had contained temporally continuous storylines mainly because they had been cut on a non-digital editing machine is inaccurate. It, for instance, does not account for the number of French New Wave films made in the 1960s, such as Alain Resnais's *L'année dernière à Marienbad* [*Last Year in Marienbad*] (1962) which contain overtly "non-linear-looking" narratives and which could do so, despite being cut on an analog editing system (Carroll 47). Third, the supposition that digital NLE directly influences all editors to think non-sequentially and to reflect this non-temporality in their film narrative, or that traditional film editing promotes the inverse effect, is inexact, from a technical or theoretical aspect. From a technical aspect, proponents of this supposition wrongly assume that the notion of linear editing refers to traditional film editing, to this analog practice's linear process of editing film, and to this linear process's predisposition to

chronological or "linear-looking" narratives. In reality, the term *linear editing* does not relate to any of these three factors but to an early form of non-digital video editing, which is still employed today.[3] Supporters of this view also mistakenly insinuate that the term *digital NLE* carries the *non-linear* title because it is predisposed to creating non-temporal film narratives; it, in fact, carries this designation because it functioned, in the late 1980s, as the antithesis to video's non-digital linear editing process.[4]

From a theoretical aspect, this supposition does not give any credence to an editor's individual working preference. Instead, it only concentrates on the notion that digital NLE contributes to editors' non-temporal thinking patterns, and that such patterns, in turn, lead to a film narrative's visually abrupt and non-chronological editing style. Through digital film editing technology, editors surely and facilely can execute tasks that do not require chronological order, such as the insertion of visual sequence A between juxtaposed sequences B and C.[5] However, a digital film editor's ability to perform non-linear functions cannot serve as "conclusive evidence" that all editors on a NLE system conceptualize film narratives in a non-chronological manner, that all editors on a traditional platform are predisposed chronological thinkers, and that a film narrative's editing style can reveal an editor's chronological or non-chronological working approach. For instance, I usually approach the digital editing process in a linear, sequential manner. Although digital NLE technology can shape an editor's work approach, I contend that it does not necessarily have to do so and that numerous other factors, especially personal taste, can be equally influential. I also maintain that it is the artistic choice of the film editor and/or director – not of the digital editing software – to create non-linear-looking film narratives and that, as a result, a natural causality does not exist between an editor's work habits and the film's editing style.

For proponents of a theoretical discourse that holds digital NLE accountable for non-temporal, fragmented film narratives, an assumed consequence may be that the practice ultimately encourages viewers to privilege non-sequential cinematic narratives as "the norm." In this regard, I am doubtful. Despite the widespread use of digital NLE within the Hollywood film industry from the early 1990s to the present day, the majority of mainstream films screened in entertainment multiplexes still follow the conventional narrative chronology of beginning, middle, and end. Why is this the prevailing tendency? One plausible answer to this query lies in the first line of Timothy Jackson's quote at the start of this paper. Although we individuals are on a daily or frequent basis exposed to digital media (e.g. Internet, email, computers) whose

temporality is marked by fragmentation, incoherence, frenzy, and speed, we are fundamentally analog [i.e. sequential] creatures who perceive lived reality in a steady, routinized, and progressive forward march. We therefore respond as much to such media as to the increasingly digital medium of film in a temporally-driven manner. Thus, when a film's end credits roll, and we are left to reflect on the storyline, we end up reconstructing the narrative, be it linear or not, in a chronological fashion. As a result, we classify films that narratively come close to mirroring our temporally progressive lifestyle under the rubric *conventional*. We however categorize those that waver radically from temporal order under the title *exceptions to the convention*. In short, our ongoing preference for chronological order as much in life as in the movies would render our unanimous acceptance of non-linear film narratives as the norm quite difficult.

CONCLUSION

It is evident that this paper touches only the tip of the analytical iceberg vis-à-vis the interplay between film spectatorship/craftsmanship, disrupted/sustained temporalities, and digital film/filmmaking. Nonetheless it can serve as a substantial basis from which a longer exploration into the digitization of the cinematic realm, in relation to "movie time" or "real time," can begin.

ENDNOTES

[1] For a number of cultural theorists, an affective, sensorial, precognitive, or precritical state refers to a human state which, by being less structured and reactionary than emotions, privileges passion over reason (Grossberg 81-3; Buck-Morss 6). During overt digital SFX moments, a spectator's engagement with the film narrative at the aforementioned level refers to his/her act of responding to the film through a "sensorial high" or "sensorial awe" that cannot be explained in words and is caused by audio-visual stimuli. In contrast, a critical or cognitive state represents a human state that privileges rational thought over visual and/or aural stimulation. Throughout this paper, the modifiers *precritical, precognitive*, *sensorial*, and *affective* are synonymous with one another, while the adjectives *cognitive* and *critical* are interchangeable.

     For more information, see Lawrence Grossberg. "Mapping Popular Culture." In *We Gotta Get Out of This Place: Popular Conservatism and Postmodern Culture*. New York & London: Routledge, 1992. 69-87. See also Susan Buck-Morss. "Aesthetics and Anaesthetics: Walter Benjamin's Artwork Essay Reconsidered." *October*. 62. Fall (1992): 3-41.

[2] I define *fictionalized realism* as a spectator's perceived sense of cinematic realism that cannot exist in actual life but that spectators deem realistic for a film's fictional realm. For example, *The Fellowship of the Ring*'s cave troll looks fictionally realistic: Although this creature does not exist in our real world it looks and sounds like an actual entity that might exist in (fictional) Middle Earth.

     I have adapted my definition from Brook Landon's *aesthetic of ambivalence* theory. His theory suggests that a moviegoer accepts a spectacle created by SFX as both a technological achievement and a realistic alternative reality. See Brook Landon. *The Aesthetics of Ambivalence: Rethinking Science Fiction in the Age of Electronic (Re)production*. Westport (Conn.): Greenwood Press, 1992.

[3] To understand why traditional/non-digital/analog video editing is linked to the notion of linear editing, I must explain the non-digital video editing process. During the process, an editor employs two editing machines simultaneously, a video player and a video recorder, and edits a film narrative by transferring video footage from the player to the recorder. This process is called "linear" because shots are laid down one after another in a linear

fashion. Because the image and sound are electronically registered onto the recorder's tape, the editor cannot physically insert extra footage into the edited narrative.

Unlike non-digital linear video editing, digital non-linear editing, which emerged in the late 1980s for both video and film, is a process through which visual footage (from DV tape or celluloid) and sound (from a digital or non-digital recording), are converted into audio-visual computer files and edited on a computer editing software. Although the editor usually lays down these files chronologically on a computerized timeline, he/she can easily insert an image/sound file in between two juxtaposed image/sound files. This ability to insert images or sound, in front, in between, or behind a pair of juxtaposed image/sound files on the computer timeline is what gives this editing format its *non-linear* designation.

For more information, see Norman Hollyn. *The Film Editing Handbook: How to Manage the Near Chaos of the Cutting Room*. Los Angeles: Lone Eagle Publishing Company, 1990. 7-9.

[4] See endnote 3.

[5] Although it would require extra time and labour, an editor nonetheless could still accomplish the same process on a traditional film editing machine, such as a Steenbeck flatbed. For instance, if an editor working on a Steenbeck wanted to insert sequence C in between juxtaposed sequence A & B, he/she would have to untape the two spliced negatives of sequence A & B, and retape them with sequence C in the middle. What makes this process faster on a digital editing platform is that the digital editor could, in less than a minute, acquire the same results, with a few clicks on a mouse.

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