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***The Hobbit: The Desolation of Smaug - A new era of Realism?***

A thesis

submitted in fulfilment

of the requirements for the degree

of

**Master of Arts**

at

**The University of Waikato**

by

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THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

2015

## Abstract

Peter Jackson's *Hobbit* trilogy is a familiar blockbuster franchise, adapting a well-known piece of literature and designed to appeal to global audiences. This trilogy, however, is also experimental, as the premium release of each film utilised higher frame rate (HFR) technologies together with computer generated imaging (CGI) and 3D in ways that were intended to extend the apparatus of cinema itself. These technological processes are part of a long line of developments aimed at creating a more compelling cinematic experience (Michelle, Davis, Hight, and Hardy, 2015). 3D film is thought to be the culmination of technological advances in film as the format's 'implicit mission was to conquer the entire sensorial complex, to represent reality in its totality' (Asselin and Gosselin, 2013, p.132). Thus, this thesis focuses on the reception of global audiences to the technological aspects of the second film of *The Hobbit* franchise, *The Desolation of Smaug* (2013), focusing on whether 3D HFR quantifiably alters viewers' viewing experience in terms of improving perceptions of realism and immersion. The research draws from a mixture of qualitative and quantitative methods, including an online survey of 650 respondents across multiple countries and 39 Skype and email follow-up interviews. The responses to and interpretations of a self-selected audience formed the basis of understanding whether these technological advancements have created a more perceptually realistic and immersive cinematic experience

The findings from this research indicate that these new technologies were a challenge to many of the expectations of *Hobbit* viewers. Despite general approval of the nature of these technologies and their possibilities for enhancing the aesthetic experience of cinema, key segments of the audience were clearly disenchanted with these innovations, especially in comparison with their experience of Jackson's earlier *Lord of the Rings* trilogy (2001-2003) and other CGI-based and 3D cinema. Respondents outlined problems in the interplay between the different imaging techniques, which generated jarring visual artefacts. They critiqued scenes where the filmmakers failed to seamlessly meld the technologies effectively, and many reported being frustrated at interruptions to their efforts to immerse themselves in the film's narrative. Furthermore, my findings suggest that ultimately, the 3D HFR technologies and the aesthetic presented were subsidiary issues to the narrative surrounding the Middle-earth world that emotionally resonates with the majority of respondents. This does not mean that these interviewees found 3D HFR technology to have clashed with the narrative, but that the film ultimately stood as a return to *their* Middle-earth world. These

responses are consistent with those noted by Michelle et al. (2015), who found that existing fan communities of Tolkien and the *Lord of the Rings* trilogy had complex reactions to the use of 3D HFR technologies and their impact on *The Hobbit* films. These findings suggest a mixed future for similar efforts to advance cinematic aesthetics through new technologies.

**Acknowledgments**

For Craig Hight and Carolyn Michelle who helped me every step of the way, my parents for their never ending support and to all those who helped in their own way to make the word count soar. But most of all thank you to all of *The Hobbit* viewers around the world who contributed through the online survey and those who offered their generous time to be interviewed for this project.

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## Chapter 1: Introduction

Technological development has always been at the forefront of the film industry; since the birth of cinema in the late 19th century to the present day there, understandably, have been many changes and improvements to the technologies that piece together image and sound to bring an audience a 'total film' experience. These technological processes are part of a long line of developments aimed at creating a more compelling cinematic experience (Michelle, Davis, Hight, and Hardy, 2015). 3D film has been seen to culminate this 'total film' experience as the format's 'implicit mission was to conquer the entire sensorial complex, to represent reality in its totality' (Asselin and Gosselin, 2013, p.132). While 3D film has been a part of audiences' viewing experience for over a century, the format has been 'remarkable for its absence of historicity' (Lippit, 1997, as cited in Asselin and Gosselin, 2014, p.132), having come in and out of favour with audiences on a seemingly regular basis. Much of the existing research surrounding 3D film is sparse, and is largely based on the perceived reasons the format failed to resonate with audiences as well as theorised audience reactions to the supposed realistic and immersive properties of an ideal 3D film effect.

Only a small amount of audience research has been conducted on 3D film, something this project aims to address. Research in this field is in many ways still in its infancy, as 3D film itself is still an ever changing format. While there have been many issues cited for 3D film failing to become a film industry standard, one of those issues surrounds film frame rates. Frame rate is the frequency with which film frames are projected onto the screen per second. While higher frame rate filmmaking has been previously experimented with, 24 fps remained the industry standard and according to Arden, Goldman, Lantin and Quesnel (2010, p.1), '24 fps has become widely known as the cinematic aesthetic'. However, 24 fps film is known to cause image blurring and strobing as the frame rate is not fast enough to accurately capture sequential visual information. Motion artefacts are particularly problematic for (24 fps) 3D film, as 'they have been shown to increase viewer discomfort and lead to a distracting experience' (Arden et al. 2010, p.1).

Recently, there has been significant interest from the film industry concerning the use of high frame rate technology with 3D films. Some of the industry's stalwarts are beginning to implement HFR technology beyond experimental films and right in the middle of blockbuster

territory. 3D HFR filmmaking may be gaining momentum as the technology has been utilized in Peter Jackson's *The Hobbit: An Unexpected Journey*. This feature was filmed at 48 fps, as were the second and third *Hobbit* instalments, *The Hobbit: The Desolation of Smaug* and *The Battle of The Five Armies*. Seemingly following Jackson's lead, 'James Cameron has promised to...shoot *Avatar 2* at 60 frames per second' (Gallagher, 2011, p.178). According to Michelle, et al. 2015, p.12),

the decision to use this combination in Jackson's *Hobbit* films was informed in part by small scale laboratory experiments conducted by visual effects specialist Douglas Trumbull in the 1970s and 80s, which showed that the reduction of blurring made possible by HFR significantly enhanced viewers' sense of immersion and realism and greatly increased visual stimulation.

Thus, there is an evident push from some within the film industry to bring HFR filmmaking to the fore. Furthermore, emerging research suggests HFR filmmaking will benefit 3D films by reducing the appearance of visual artefacts and in turn increasing perceptions of realism and immersion as the increased frame rate promotes a more fluid and naturalistic motion on screen. This push from the industry may thus be seen as a case study in HFR as to whether it can serve to extend the cinematic apparatus in offering a leap in the cinematic aesthetic and the possibilities for a richer film experience. However, Arden et al. (2010) make the point that audience receptions of HFR have been quite divergent: An extract of Jackson's 3D HFR *The Hobbit: An Unexpected Journey* screened at Comic Con in San Diego in 2012 'was met with a less than glowing response...and with the release of the entire film...criticisms of the technique continued' (Gallagher, 2011, p.178). Many felt HFR was 'anti-cinematic' as 'the magical illusion of cinema is stripped away'. Despite this initial reaction it would appear the technology might have a prolonged use in mainstream film. While Bowels (2011) asserts that 3D film is not a new cinematic innovation and that it cannot be looked upon as one, the filmic experience that is created with the addition HFR may alter the visual properties of 3D film to the point where previous assumptions about audiences' engagement with the format have to change. Thus, we now may be dealing with an entirely new era of 3D film that requires a renewed critical analysis of *3D HFR* film.

The current research is centred on *The Hobbit: The Desolation of Smaug* (mainly because the release of the film coincided with the beginning of the research). *The Hobbit* film trilogy is

worthy of research as it stands as the continuation of 3D film's 21<sup>st</sup> century revival in mainstream cinema, and also showcases HFR technology and its ability to work with 3D. The research utilised a mixture of qualitative and quantitative methods to understand self-selected audience responses to and interpretations of the cinematic technologies used in the film (3D, HFR and CGI) in order to understand whether these technological advancements have resulted in a qualitative difference to the audience's viewing experience. It was important to gauge audience reaction to 3D HFR's impact on *The Hobbit's* CGI since CGI animation has become routinely implemented within popular cinema since the late 1990's (Allison, 2011) and 'audiences for Hollywood action and fantasy blockbusters now routinely anticipate extensive and proficient use of CGI' (Langford, 2005 as cited in Michelle et al., 2015, p.1). Furthermore, the impact that 3D HFR was seen to have on narrative transportation was also a focal point of the research in order to ascertain if these technological developments were enabling greater immersion into the narrative.

An online questionnaire<sup>1</sup> was included in the research methodology, and this was completed by 650 respondents from around the world. The questionnaire was distributed online through forums such as Facebook and online Tolkien and the *Lord of the Rings* fan pages. In order to build upon the data from the questionnaires, 39 interviews were conducted through Skype and email<sup>2</sup> with interviewees who indicated a willingness to participate by leaving their email at the end of the questionnaire. As a result of this recruitment process this project most obviously managed to engage with those involved in the fan cultures around the *LOTR* and *Hobbit* literature and film trilogies.

The remainder of this thesis is set out as follows. Firstly, the following chapter outlines a historical overview of 3D film to illustrate some of the assumptions around what the ideal spectatorship for the format should be. The chapter also covers the existing (limited) research that has been done surrounding 3D and HFR film and the supposed effects these technologies have on audiences. Chapter 3 provides details on the research methodology used for this project, covering the reasons why online questionnaires and interviews were implemented, along with the positive and negative attributes that were encountered as a result of using these methods. Chapter 4 provides a demographic summary of the respondents and explores the results of the questionnaire to provide an overview of potential audience positions taken

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<sup>1</sup> See appendix 1 for a copy of the online questionnaire

<sup>2</sup> See appendix 2 for a copy of the Skype and Email questions

toward 3D HFR in *The Hobbit*. These audience positions are then examined in greater detail in chapter 5, which explores the variety of discursive positions prominent within interviewee responses to questions surrounding the use of CGI, 3D and HFR in *The Hobbit* films. Finally, chapter 6 provides some final thoughts on these research responses and the conclusions that can be drawn from this audience research project. Some suggestions for further avenues of research are also put forward.

## Chapter 2: Literature Review

Much of the existing research surrounding 3D film is sparse and is largely based on the perceived reasons the format failed to resonate with audiences, as well as theorised audience reactions to the supposed realistic and immersive properties of an ideal 3D film effect. It is important to examine this history of 3D film as it helps to understand what the ideal effect of 3D film is. A small amount of audience research has been conducted on 3D film; while this research does help build knowledge surrounding audience reactions to 3D, research in many ways is still in its infancy as 3D film itself is still an ever changing format.

The aim of 3D (stereography) is to replicate human vision and generate it using a two-dimensional surface. Stereographic vision can be artificially created with photographs: ‘when we show the left eye view only to the left eye, and the right eye view only to the right eye, the brain is tricked into combining the two photographs into a single stereoscopic image’ (Zettl, 2012, p.152). Such a process formed the basis of the first stereographic viewing device, when Charles Wheatstone invented the first stereoscope in 1838<sup>3</sup>. The above process was simulated in Wheatstone’s stereoscope by placing ‘two identical, but slightly offset, still images... [in]...this device, which separated the images by positioning a wooden bar between the eyes; a perceived sense of depth was therefore created’ (Atkinson, 2011, p.141). An individual viewing these images would cognitively overlay these two identical images and view them as a singular three-dimensional image. There was a clear emphasis on the visual presentation of wonderment and the visual allure of three-dimensional images (Gurevitch and Ross, 2013). The discursive thread that came to dominate the discussion of these images centred on spectacle, as the format ‘developed the language of the self-promotional attraction... a multi-faceted industry emerged to satisfy the demands of a public eager to lay their eyes on new visual attractions’ (Gurevitch and Ross, 2013, p.85). While the fad surrounding stereoscopes waned, the preoccupation with such imagery did not. Film employing 3D has a history of coming in and out of favour with audiences so frequently that there must have been a strong enough reason for the format’s continual resonance with audiences (or its favour within the industry). As Asselin and Gosselin (2013, p.132) assert, ‘the film medium’s implicit mission was to conquer the entire sensorial complex, to represent reality in its totality. The arrival of stereoscopic 3D (S3D) was thus seen to be part of a natural evolution, a step toward realizing

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<sup>3</sup>Despite Wheatstone inventing the ‘stereograph’, it was developed and commercialized by David Brewster and Jules Duboscq in 1851.

this destiny' (see also Atkinson 2011; Higgens 2012; Katzenberg, 2009, as cited in Elsaesser, 2013; Eisenstine, 1947).

A large amount of academic theory surrounding 3D effects claims that 3D film should heighten perceptions of cinematic realism and consequent immersion because 3D changes the relationship that audiences hold with the (2D) screen. Ross (2013, p. 406) asserts that 3D film asks the audience to:

Consider whether the screen is there at all because the use of negative and positive parallax explodes any singular plane of action based on the flat screen...

[S]tereoscopy's multiple optical illusions suggest that certain objects are within reach of our fingertips or that we are situated in a 3D landscape that stretches far back to infinity.

It is such effects of 3D film that are seen to provided audiences with a perceptual feeling that mirrors real life, in that 'it is not the reproduction of the perceived objects, but the reproduction of the experience of perception; it involves not so much the illusion of depth or relief, beyond the surface, as the transportation of the user outside the frame, into the centre of the virtual world - an egocentric spatial immersion' (Asselin and Gosselin, 2013, p.137). Such a point is similarly made by Slater, Usoh and Steed (1994), where image depth in a virtual environment correlates to feelings of being present in the on screen world (see also Freeman and Avon, 2000; Freeman, Lessiter and Ijsselsteijn, 2001; Ijsselsteijn, Wright, Alverez, et al., 2001).

The first wave of 3D films began in the 1920's, however viewership began to wane after the introduction of 'talking pictures'. It was not until 1950 that cinematic 3D was again in popular demand. At this time, the language used to describe 3D film centred on the technology allowing 'viewers to see things as they are in nature' (Johnston, 2012, p. 247). The visual effects of 3D were promoted as enabling viewers to see 'all objects in solid relief, as perfectly as if the landscape itself were spread out before it...as if we were looking out of a window' (Johnston, 2012, p. 247). One particular film, *Bwana Devil*, was marketed in such ways. The tag line of the film perpetuated these ideas of naturalistic realism by claiming that the audience would feel as though there was 'a lion in your lap! A lover in your arms!' Audiences were noted as being initially taken by the visual spectacle of 3D film where

reviews of ‘all-British stereoscopic film technology...described entertainment ‘in a most life like form’, displaying ‘a very real feeling of surface texture’...featuring objects that looked so realistic you wanted to reach out and touch them’ (Johnston, 2012, p.248). However, as 3D films continued to be produced and distributed in a prolific way, the language used by audiences began to turn. This ‘cinema of the future’ was increasingly seen as nothing but a cinematic gimmick where the format seen as being ‘compelled to promote its chief technical virtue’ (Bowles, 2011, p.104).

Audiences were supposedly taken aback by the continual use of negative parallax, a 3D effect that creates a visual perception of an object emerging from the screen and inhabiting the theatre and audiences' personal space. It is the use of negative parallax that appears to have made 3D a contentious topic within film, where the effect is seen to reinforce the aesthetic of *3D spectacle* that distracts the audience from the *narrative* and ‘limits it to brief periods of success as spectacle, as opposed to being used for more serious narrative purposes’ (Sandifer, 2011, p.62, see also Zettl, 2012; Paul 2004). Zone (2007) makes the point that ‘3D images present... a visual allure so powerful that they can easily *overwhelm the story and subvert the narrative*’ (as cited in Brown, 2012, p. 262, emphasis added). However, Brown counters that narrative can work alongside spectacle, and suggests that ‘if heightened perceptual immersion, during spectacular moments, compromises narrative immersion, by interrupting the narrative, both nonetheless work towards the common goal of immersion’ (2012, p.263).

Theories surrounding cinematic realism centre on an indexical relationship with the real world; thus, it may be that these ideas surrounding cinematic spectacle breaking filmic immersion are in line with theories surrounding the technology of CGI. A key issue is that an audience, at times, will be faced with imagery that has no existing real world referent. As with 3D, some critics of CGI purport that use of the technology can subvert the flow of the narrative (see Neale, 1983; Pierson, 2002; White, 2013) as these instances of CGI spectacle take precedence over the narrative of the film. Allison (2011), however, makes the point that motion-capture technology enables CGI characters to take on psychologically complex traits, as indexical recordings can be taken from reality. Thus, artificially created characters can be based on the ‘results from an indexical recording of real world movements... perpetuating cinema’s fusion of the index and icon’ (p.338). Similarly, Whissel (as cited in Longo, 2014) remarks that CGI stands as:

spectacular visual effect that gives stunning and sometimes allegorical expression to a film's key themes, concepts, and precepts. Rather than disrupt or halt the flow of narrative [they]...rely heavily on dialogue and narrative to function in the films in which they appear. (p.84)

Thus, the integration of CGI into a film may be relevant to the narrative context that it appears in. Giralt (2010) makes a similar point suggesting that cinematic images do not reproduce a representation of real life; rather, a representation of realities that incite emotional reactions of realism, or not, to an audience. As everything generated using CGI is a simulation made to appear organic to our physical world, CGI may seek to create a sense of realism for objects that do not have an indexical referent, by abstracting aspects of reality - be it movement, facial structure, texture or lighting - and reconstituting these real world tropes into artificial characters.

There is a large body of academic literature suggesting that 3D effects should in theory be able to create a more realistic and immersive viewing experience as compared to 2D. While there is an increasing amount of theoretical work that suggests 3D imagery helps in creating an *embodied* spectatorship (Casetti and Somaini, 2013; Ross, 2013), there is a lack of empirical research to support these claims. Many remark that much of the existing empirical research pertaining to 3D film and audiences typically comprises small-scale laboratory projects that are not representative of normal cinema audiences (Ji, Tanca and Janicke, 2013; Cho, Lee and Choi, 2014; Rooney and Hennessy, 2013).

One study carried out by Rooney and Hennessy (2013) sought to counteract such methodological issues by investigating the effect of realism on attention and emotional stimulation among 225 audience members for *Thor* after having seen the film in either 2D or 3D in theatres. It was found that those who watched *Thor* in 3D rated the experience as being more perceptually realistic than their 2D counterparts (see also Pölönen, Salmimaa, Aaltonen, et al., 2009; Rooney, Benson and Hennessy, 2012; Seuntjens, Heynderickx, Ijsselsteijn et al., 2005). 3D film audiences were less likely to be distracted from the film; however, there appeared to be no difference between those who watched the film in 3D or 2D in terms of emotional arousal or satisfaction. Rooney and Hennessy (2013) also found that experienced 3D film respondents found *Thor* to be more realistic and reported higher emotional arousal and satisfaction than novice 3D film viewers.

Another study carried out by Ji, Tanca and Janicke (2013) similarly sought to examine whether 3D films made for a greater cinematic experience as compared to the same film in 2D. Of 130 undergraduate students, 65 watched *Dolphins Tale* on a 3D television while the remaining 65 watched the same film in 2D. Results indicated that there was no discernible difference in participants' self-reported levels of emotional arousal, attention, memory and emotional fatigue. Ji, Tanca and Janicke (2013) assert that for 3D films, 'viewer experience might be highly genre dependent...[with *Dolphins Tale*]...the 3D's ability to enhance this content arousal with its additional structural features could not be fully exploited, as compared to an action movie for example, i.e. *Transformers*, where 3D lends itself more to enhance the emotional arousal that is already provided by the story line' (2013, p.6). This point is echoed by Ji and Lee (2014), who found that 3D action/fantasy was rated as being more adept in provoking enjoyment and presence as compared to documentaries, while 3D was seen to improve narrative engagement in the documentary format over drama. Furthermore, Cho, Lee and Choi (2014) measured perceived sense of presence, depth, arousal and overall cinematic satisfaction among 188 viewers in relation to a 15-minute 3D film viewed in an actual cinema. Results indicated that that viewers reported higher arousal and film satisfaction when objects were manipulated in both 'near' and 'far' conditions, or both positive and negative parallax. However, those viewers who are accustomed to watching 3D reported reduced feelings of arousal from the technology along with lessened feelings of presence, depth and satisfaction.

Arden et al. (2010) found that 3D shots were heralded as being more successful when the editing and scene composition was slower. This is a point that Atkinson (2011) also makes, asserting that 3D is starting to move through a 'rethinking and reconfiguration' and that *Avatar* stands as the exemplar as the cinematic language of 3D films has changed, using

visual aspects as the main mechanism by which to convey the story, and the characters' emotions and relationships. The shots contain much more foreground and background detail in which we are immersed in the beauty and detail of their construction and their rich visual imagery. They also tend to be held on-screen for longer periods of time, encouraging a prolonged indulgence with the image. (p.13)

Which, in turn, may 'address the problem faced by 3D aesthetics of how to make stereo spectacle serve a narrative master (Ross, 2012, p. 219).

As previously noted, 24 fps films has been criticised for causing strobing and motion blur in 3D films and there have been a number of studies that have explored the visual discomfort, headaches, feelings of visual fatigue and nausea that audiences have encountered while watching 3D cinema (see Hakkinen et al., 2008; Pölönen et al., 2012; Solimini, 2013; Tam, Speranza and Yano et al., 2011; Urvoy, Barkowsky and Le Callet, 2012). However, emerging empirical research purports that these physiological problems are resolved through the use of HFR because 'the audience is still subconsciously aware of the flicker and blurring at frame rates below 60fps' (Arden et al. 2010, p.3). HFR is seen to promote a seamless stream of images. Trumbull (2014) along with Arden et al. (2010) assert that with 'higher frame rates you tend to approach reality in the sense that the real world is not a series of still photographs but instead has this fluid smoothness when the distracting flicker between frames is minimized' (Trumbull as cited in Gilchrest, 2014, p.38). Thus, HFR filmmaking is seen to create a greater perceptual experience of realism and immersion as the increased image clarity and smoothness promotes a 'first person experimental cinema as though what's happening is actually unfolding in real time...its going to be like a window. So it is a movie that is more like a live show' (Trumbull as cited in Gilchrest, 2014, p.9). While Trumbull's claims are scientifically dubious as results are based on laboratory experiments there is an emerging discourse from this field of study indicating that HFR is a positive addition to 3D filmmaking.

Arden, Goldman, Lantin and Quesnel (2010) found that the reception of a dual frame rate<sup>4</sup> 3D and 2D film they created yielded results that echo what Trumbull proclaims. They found that the variable frame rate film in 3D lead to viewers having a greater retention of visual content. Arden et al. (2010, p.9) were not surprised by such findings, as they contend that 'stereoscopic 3D provides another depth dimension to a dynamic image, and HFR provides up to five times the amount of temporal resolution as a standard frame rate. This allows for extra information and detail for the viewer, as well as a new level of intimacy with the picture's subject matter, likening it to a first person experience'. However, results also indicated that 'the appreciation of the aesthetic appearance of HFR/VFR remains divided

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<sup>4</sup> 24, 48 and 60 frames per second made up the dual frame rate.

between viewers who are not accustomed to the look and viewers who have begun the process of familiarity' (Arden, Goldman, Lantin and Quesnel, 2010, p.9) While the added information that HFR brings to the screen was labelled as a positive filmic attribute, it was also noted that some shots 'were shockingly intimate, HFR close ups of faces often broke the tolerable intimacy boundary for the viewer' (Arden, Goldman, Lantin and Quesnel, 2010, p.8). This seemingly polarized reception of such shots may be due to the fact that viewers may not be comfortable with the aesthetic change that HFR brings to the format as compared to the years of standard frame rates. Such a thought is echoed by Gallagher (2013, p.90), who comments on the initial reception of the HFR technology showcased in *The Hobbit: an Unexpected Journey*: 'it was criticized for showing too much detail and therefore detracting from the 'magic' of the film'. Moreover, Arden et al. (2010, p.4) also state that at Comic Con:

clips were presented outside of their narrative context in a montage format and viewers had some very legitimate concerns over the footage... [C]omments ranged from 'the shot with the actors taking was too realistic, it took me out of the immersive 3D experience and I was reminded I was watching a film', to 'the landscape and action shots were stunning and incredibly immersive.

The point that Arden et al. (2010, p.4) make is that only *clips* of *The Hobbit* in HFR were shown; thus, these clips appeared outside of their broader viewing context. Consequently, it is purported as being difficult to appreciate HFR technology because the effect is intended to enhance the affect of a narrative situation.

Other studies centred on 3D and HFR are based on purpose made image sequences that are not centred within any filmic or narrative context. Kuroki (2012) investigated the relationship between 3D HFR and feelings of depth perception where it was found that 'using moving random dot stereograms to study depth discrimination under several conditions showed that three-dimensional motion images produced and displayed with a frame rate of 240 fps enable finer discrimination of depth for the viewer compared with frame rates of 120 or 60 fps' (Kuroki, 2012, p.566). Kuroki's results indicated that participants found HFR generated a fluid on screen action thus allowing greater judgments of depth. Furthermore, Kim and Oh (2014) sought to examine the reported visual fatigue and/or visual gratification viewers gained from 3D viewed by manipulating the 3D image depth, speed and frame rate (30, 50

and 60 frames per second) of a 3D car traveling across a 3D television screen. Forty-five participants were involved and they were required to self-report their degree of satisfaction after watching the visual segment for each of the conditions tested. Results suggested that the majority favoured HFR for registering depth and speed. Frame rate was also the centre of Ruppel, Alff and Gollner's (2013) study, which sought to research 30 participants and the ways in which they engaged with a number of HFR 3D scenes. Their results indicated that 48 frames per second generated the greatest sense of image clarity and flow of on screen motion, particularly in relation to sequences with a higher pacing.

Thus, it is evident that existing literature and research pertaining to both 3D and HFR is currently limited and somewhat problematic as it relies on laboratory based experiments rather than engaging with the responses of real audiences watching a film production in its entirety. This poses its own limitations in creating a clear understanding of the potential effects of these technologies. While existing theory that surrounds 3D HFR and the impact it may have on film and audiences is seemingly in line with the empirical research that has been done, in order to fully understand the ways in which audiences may be engaging with 3D HFR and the effects they have as cinematic technologies, this project begins with the assumption that it is important to use a research population of naturally occurring 3D HFR audiences.

### Chapter 3: Methodology

The research was designed to include a mixture of qualitative and quantitative research to gain a clearer insight into audience responses to and interpretations of the cinematic technologies used in the film (CGI, 3D, HFR). The research methodology was made up of a two-part sequential process that gathered both quantitative and qualitative data. The quantitative data established a framework of audience responses that the interpretation of qualitative data could build upon; consequently the qualitative data held the greatest weight in reporting the research findings. By firstly implementing an online questionnaire a large amount of respondents could be reached at low cost, providing an establishing overview of the potential audience positions. With that knowledge, interviews could then be conducted that sought to further explore the reasoning behind why this particular audience segment were taking such a position toward 3D HFR in *The Hobbit: The Desolation of Smaug*.

The online questionnaire took a quantitative styling, although four open-ended questions did give respondents an opportunity to share their views, providing an element of qualitative data to the questionnaire (See Appendix 1). The questionnaire allowed an exploratory approach to be taken towards a new topic, enabling the important variables of cinematic engagement to be initially identified and examined. In turn, this approach provided an insight into the general nature of how a *section of The Hobbit's* audience base was engaging with the 3D HFR technologies. As outlined in the previous chapter, there is limited existing literature on audience engagement with 3D and HFR cinematic technologies, let alone existing research exploring whether these technological advancements have resulted in a qualitative difference in audiences' viewing experiences, or the factors that push audiences to watch, or avoid watching, cinematic films in either 2D, 3D or HFR formats. For this project, implementing an online questionnaire was seen to be appropriate as it allowed an initial overview of how different audience segments were responding to 3D HFR technologies.

While questionnaires provide an efficient way of reaching a large number of people at a low cost, there is generally not a large return rate of completed paper questionnaires. Using an online questionnaire was seen to potentially counteract this. As Bertrand and Hughes (2005) note, as digital technologies have expanded there has been an increasing amount of autonomy given to audiences. Within our digital world connectivity is seemingly unlimited and within that the dynamics of how audiences consume media texts are changing because the audiences

themselves now have control over when, where and how they consume media (Napoli, 2010). Therefore, as the questionnaire was online it allowed for greater ease for potential participants, as it could be completed in a place and at a time that suited them. Being online, the questionnaire could also be distributed and circulate across digital connections, thereby taking 'advantage of the ability of the Internet to provide access to groups and individuals who would be difficult, if not impossible, to reach through other channels' (Wright, 2006, np). The online questionnaire had the potential to reach far more respondents across a large geographical distance than any physical distribution would have allowed within the time constraints for this Masters project.

However, Wright (2006, p.np) makes that point that online research can create issues with regard to the sample, as 'little may be known about the characteristics of people in online communities, aside from some basic demographic variables, and even this information may be questionable'. However, as there were no age, gender, cultural or racial specifications that participants were required to meet, using the Internet as a distribution point did not pose any threat to having the questionnaire completed by those for whom it was not intended. In the unlikely event of an individual who had not seen the film completing the questionnaire, the nature of their responses would illustrate that, and their contribution could be discarded.

Participants were recruited on a voluntary, self-selected basis; however, the ways in which they were recruited did deviate from the initial plan. The *University of Waikato* campus was the initial starting point for distributing the questionnaire by approaching a broad range of undergraduate classes and tutorial groups to explain the aim of the research and promoting the URL link to the online questionnaire, hoping that at least some would choose to complete the questionnaire online in their own time. From there, it was hoped that a snowball effect would occur whereby these initial participants would inform others about the online questionnaire, thus furthering its dispersal. The FASS Human Research Ethics Committee of the University did note that 'using students as participants...should always be done bearing in mind that students are not a resource and are often recruited for research'. However, the concern my Faculty expressed was not a problem as the proposed research approach did not eventuate because promoting the questionnaire on *Facebook* itself resulted in a large-scale response rate. Family, friends and others from my networks were encouraged to 'share' a *Facebook* link to the questionnaire explaining what the research was about, along with the URL link to the actual questionnaire. It was hoped the questionnaire would circulate online as

others ‘shared’ the link further, thereby spreading the link across a large domain of ‘friend’ groups and allowing it to potentially reach a broad range of participants. The questionnaire link was also distributed on *Facebook* by messaging Tolkien, Lord of the Rings, Weta workshop and 3D film pages whose page administrators would then ‘share’ a link to the questionnaire. These *Facebook* page distribution points had an existing audience base, where the range of *likes* on the pages was from 4,000 to 180,000. While not all of these individuals followed through to share the questionnaire, I did gain access to potentially thousands of people from around the globe with access to the questionnaire, obviously far more than could have been achieved by physically approaching groups and individuals at one location.

Perhaps most crucially, the questionnaire was promoted on the *Lord of the Rings* fan site *theonering.net*, and one particular individual wrote a piece regarding concerns over 3D HFR and *The Hobbit* on the internet site *Yahoo Movies UK and Ireland*, in which a description of the current research and link to the questionnaire was provided<sup>5</sup>. This article on the research asserts that *stereoscopynews.com*<sup>6</sup> was the basis of how the article’s author came to know about the project. This showcases just how much of a snowball effect took place: information about the research and the questionnaire link were circulated to an audience well outside of what was initially expected. After these actions that response rate to the questionnaire rose exponentially, gaining 993 responses in total. After cleaning the data set, this was later reduced to 650, as there were a number of respondents who stopped responding after answering 3-4 questions. A small number of responses were also removed as it was clear that the questionnaire was not being answered in a serious manner, but nonetheless responses exceeded the 200 which were originally sought. Moreover, the responses to the questionnaire were truly global. Participants were asked about their nationality and current geographical location. The majority of respondents were American (27.54%), followed by British (12.73%) and New Zealanders (11.36%). There were a host of other nationalities within Europe, mainly German, Swedish and Dutch, who were also strongly represented. However there were also Japanese, Indian, and Fijian respondents, to name a few (See Chapter 4).

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<sup>5</sup> <https://uk.movies.yahoo.com/hobbit-desolation-smaug-actually-better-3d-hfr-063500267.html>

<sup>6</sup> <http://www.stereoscopynews.com/hotnews/3d-technology/research-projects/3723-researcher-wants-your-answer-to-did-you-like-the-hobbit-in-3d-hfr.html>

Because the respondents were self-selected, they were most likely highly self-motivated because of an existing affinity with Tolkien, Jackson or stereoscopic film. There was no incentive to partake in the questionnaire other than any intrinsic satisfaction that may have been derived from engaging with the content matter. This is illustrated by the actions of the individuals who promoted the questionnaire of their own accord; it is fair to assume that these respondents are ones who hold Tolkien and Jackson's Middle-earth, along with stereoscopic film, close to their heart and are highly motivated to engage with such content matter. The fact that another highly probable way these respondents found the questionnaire was through Jackson, Tolkien or Film Facebook and Fan pages again indicates that these respondents are not a representative sample of *The Hobbit: The Desolation of Smaug's* audience base, but rather a section of it who hold some form of affinity with the Lord of the Rings, Tolkien's novels or Peter Jackson, or are more active and engaged fans of film and stereoscopy.

Data from the four open-ended questions was coded using an inductive coding method. If particular responses were made at least 15 times, then those responses were given a code that was representative of the comment. This was a primary code, which sought to capture the overt meaning of the response. In many cases secondary codes were also assigned, as there were some subtle nuances to the comments that one primary code itself was not able to capture. The reason for coding the responses was to highlight response trends in the data, which in turn revealed potential audience positions relative to what each question was asking.

Four focus groups were also a part of the initial research methodology. These were intended to enable rich qualitative data to be gathered alongside the questionnaire's quantitative data and less expansive qualitative component. These two approaches were to complement each other, with the focus groups used to further explore and enrich the questionnaire data and provide more complex and in-depth insights.

Participants for the focus groups were to be recruited throughout the course of administering the questionnaires. Again, as initially planned, when attending *University of Waikato* classes I mentioned that focus groups were being conducted and those who were interested in being involved were invited to provide me with their email address. The finalised questionnaire itself also included a brief statement inviting respondents to participate in a focus group. It was also added that individual interviews were an option. While the initial aim was to conduct focus groups with local students, this individual face-to-face interview option proved

to be very popular and became the predominant method used. The interviews were semi-structured and ‘organized around a set of predetermined open-ended questions, with other questions emerging from the dialogue’ (DiCicco-Bloom and Crabtree, 2006, p. 315). It was decided that the interviews would be semi-structured as this allowed questions to be altered or added in order to create a dynamic interview where additional questions could be asked in order to delve deeper into the reasoning behind why the respondent was taking such a stance toward a particular filmic element.

As previously noted, 650 individuals fully completed the questionnaire and of these 119 provided their email address, indicating their interest taking part in focus groups or interviews. This number greatly exceeded the number of interviews that could be carried out in the allotted time frame and because of the global location of these individuals, conducting focus groups was not possible. While conference calls could have been made on Skype, time zone issues were likely to have been an issue in bringing these individuals together successfully. Thus, individual interviews were implemented, as this approach was the most effective and efficient way to interview the respondents. Of those 119 individuals, 62 indicated they had seen *The Hobbit* in both 3D HFR and 2D. These 62 individuals were contacted first, as it was thought that these individuals would be able to provide a more in-depth analysis of any potential differences they perceived in watching *The Hobbit* in 3D HFR as compared to 2D, thus helping to determine whether these technological advancements have resulted in a qualitative difference in audiences’ viewing experiences and degree of narrative transportation. These individuals were contacted by email and asked if they wished to be involved in a one hour Skype interview, and if so times were arranged to talk over Skype.

Interviewees were also emailed information sheets containing information about the purpose of the research, what their contributions to the research were to be used for, and the rights they had as a participant. Interviewees were also emailed a consent sheet and consent to participate was verbally sought and provided. Interviewees were also made aware of the fact that the Skype calls were being recorded and gave their consent to this before proceeding.

Issues concerning interviewee confidentiality or anonymity were raised as it was through email that Skype and email interviews were arranged. As Selwyn and Robson (1998, p.) state, ‘it is virtually impossible to guarantee the respondent anonymity as their name, or at least

their e-mail address, is automatically included in their reply'. However, these emails were kept on-line and protected by my personal password in order to be viewed. Furthermore, interview audio and hardcopy transcripts were kept throughout the research process. Audio data was kept on my personal computer and hardcopy transcripts were kept secure during the research process in a way that was non-identifying. It was prudent to take such measures to ensure interviewees material was kept confidential, as promised. A recording device captured Skype recorded calls; this allowed transcripts to be made in order to capture the nuances of a verbally dynamic interview, which may have been lost if only notes of the interview were taken.

The remaining 57 questionnaire respondents who had indicated they were interested in being interviewed were emailed a word document containing a list of the interview questions used for the Skype interviews (See Appendix 2), with space in which these individuals could type in a response and email back the document in their own time. This strategy was put in place as there was a wealth of individuals who indicated a willingness to share their thoughts regarding 3D HFR and its effects on *The Hobbit*; thus, it seemed appropriate to fully utilize these individuals as research participants. While email interviews could not replicate the in-depth qualitative responses that Skype interviews yielded, nonetheless, there was still a wealth of nuance to these responses. From these 57 individuals, 18 emailed back with completed email responses, adding to the existing 20 Skype interviews that were undertaken. Thus, there was a total of 38 interview responses of some form to make up the qualitative data section of the research.

As a point of interest, it was made known to the FASS Ethics Committee and the interviewees that any research data obtained would become a part of *The Hobbit Audience Project* database. This is a significantly larger audience research project that is being conducted through the University of Waikato, by existing staff members Associate Professor Craig Hight and Drs Carolyn Michelle and Ann Hardy, whose research is also centred on reception of 3D HFR technology and *The Hobbit*.<sup>7</sup> Issues pertaining to interviewee confidentiality were not put at risk through this action.

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<sup>7</sup> See <http://www.waikato.ac.nz/fass/research/centres-units/aru/research-projects/hobbit-audience-project>

While the global reach of the research proved useful in gathering a larger sample, one issue that arose from this was problems with language. In only a small number of instances, some interviewees appeared to be more proficient in writing in English than in speaking English. Thus, while arranging a Skype interview was of no concern, over Skype in a verbal exchange it was sometimes difficult to communicate the research questions and understand the responses given. Every effort was made to conduct the interview to a high standard and to complete these interviews, as the respondents had willingly sacrificed their time for my sake; however, interviews such as these were omitted from the data set, as I was unsure that I had accurately understood the respondents' meaning.

Responses to the questions asked in the Skype and email interviews were again coded in order to capture the common themes within the comments made. The codes that were assigned to these responses were the same as those that were developed in the questionnaire coding process. It was never the intention for the same codes to be used; however, it quickly became apparent that the responses to the questionnaire closely foreshadowed that of the interview responses. The points that were prevalent in the questionnaire were again expressed in the interviews.

It is important to reiterate that the research data gathered from the questionnaire, Skype and email interviews may not necessarily be generalisable to *The Hobbit* audience as a whole, as the nature of the online groups that were used to source self-selected participants were based around a particular set of common interests. Thus, the data collected is not a representative sample that can be aligned with *Hobbit* viewers as whole. Therefore, the potential audience positions that come from the research can only represent a particular section of *The Hobbit's* viewers. However, the data does shed some light on how the general audience may be reacting to the implementation of 3D HFR technologies, relative to *The Hobbit* and other films of a similar genre. What this research does offer is potential insight into how audiences may in fact be engaging with these technologies in relation to cinema. It may not provide definitive answers but it does highlight that previously-held assumptions regarding 3D cinema being a gimmicky format that hinders narrative transportation need to be reconsidered.

It is important to note that any potential audience positions covered cannot be seen as being generalizable to *The Hobbit* audience as a whole. Furthermore, these respondents reaction to

the effect that 3D HFR technologies had on their filmic experience cannot be generalizable to the technologies as a whole. However, it is through this research that we can begin to see a contrast from what existing academic literature asserts about 3D film audiences and the ways in which the majority of these respondents engaged with 3D HFR suggests that 3D film may not be destined to fail.

## Chapter 4: Overview of Questionnaire Findings

The present study began with an online questionnaire, which garnered 650 responses. Through the questionnaire I asked 25 questions (see Appendix 1), comprising a mixture of forced choice, checklist and open-ended questions, centred on participants' general film habits and overall attitudes toward the film experience, realism and immersion in relation to 3D, HFR and CGI technologies, and how these technologies impacted on the narrative and on one another. The responses to these questions proved to be extremely useful as they provided an initial framework to illustrate how the research participants, and potentially the wider audience of *The Hobbit: The Desolation of Smaug* and other 3D films, are engaging with and responding to these emerging cinematic technologies.

In total, 993 respondents attempted the online questionnaire. However, as noted above, not all of those respondents went through to complete the questionnaire. Thus, the final sample set was refined down to 650 respondents. The criteria used as the basis of this refinement centred on respondents firstly attempting to complete the questionnaire in its entirety, and secondly offering fulsome responses. Participants were able to convey their subjective thoughts and feelings through the inclusion of four open-ended questions. After an initial coding process it was found that responses to each of these questions could be characterized into four different primary codes (positive, negative, ambivalent and indifferent). The aim of the primary codes was to provide a classification framework that allowed each comment to be characterized and grouped together with similar responses. Secondary codes were also created, as some responses were complex and one code was not able to accurately represent the content of the comment.

Of these 650 respondents the largest nationality group was Americans, who constituted 27.54% of the respondents, followed by British (12.73%), New Zealanders (11.36%), Germans (8.60%) and Australians (8.09%), with 20.65% of respondents being of other nationalities.

With regard to gender, 66.03% of the respondents were male, and 33.97% were female. The age distribution was wide ranging, although the 18-21 year old age bracket was most prominent at 19.27%. Not far behind were the 22-25 and 31-40 year old brackets, which respectively made up 18.48% and 18.64% of respondents.

Many of the respondents were highly educated. 15.87% have received a High School leaving certificate, 16.19% gained University Entrance, 36.06% hold a Bachelors degree and 12.50% stated they held a Masters degree or Doctorate. Respondents could also report on their income level relative to the average income of their country of residence. While 10.95% declined to answer, 85% of respondents reported a high-middle level of income to a lower-middle level.

A previous audience research project centred on *The Hobbit* (Davis, Michelle, Hardy and Hight, 2014) has shown that if a respondent has worked in the film or television industry or has studied media production, such experiences have the potential to inform their engagement with the films. In the present study, 21.97% of the respondents have worked in film, video production or the creative industries and 24.68% have an advanced or tertiary level of media production education.

Responses from the four open-ended questions were coded using an inductive coding method in order to highlight response trends in the data, which in turn illustrated potential audience positions relative to what each question was asking. While these codes highlight the specific nuance of the responses there is an overriding trend of responses being fundamentally positive, negative, ambivalent or indifferent. As such, the following sections within this chapter presents patterns that arose according to particular issues explored through both closed and open-ended questions<sup>8</sup>.

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<sup>8</sup> The questionnaire respondent quotes in this chapter do not have identifiers included (age, gender, nationality etc.) as the aim of the chapter is to present representative quotes of the overall audience positions taken by respondents.

#### 4.1 HFR: A Positive Impact on Audiences' Viewing Experience

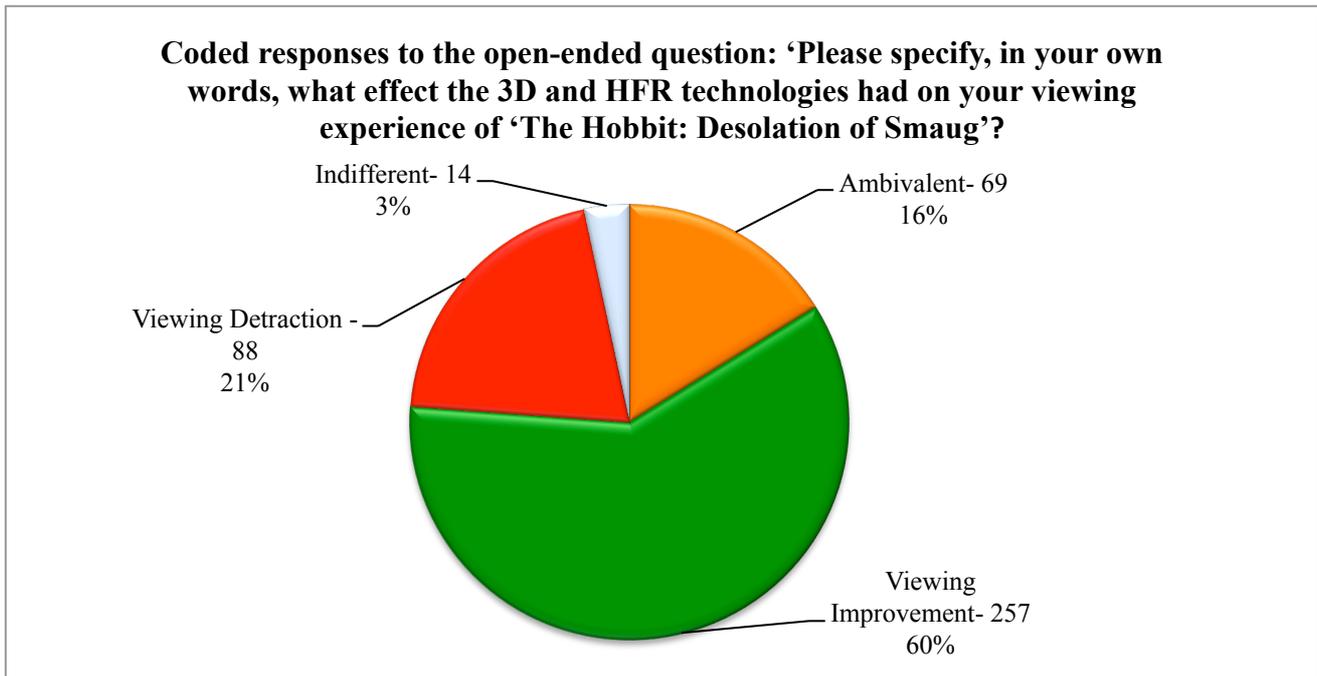


Figure 1: Coded responses to open-ended questionnaire question 15

With an initial look at the quantitative results a picture begins to form as to how these respondents engaged with this relatively new addition of HFR technology to mainstream cinema. While the HFR technology did require a period of adjustment for a small number of the respondents, HFR was ultimately seen to create a visible improvement in the image clarity and detail, and was regarded as an improvement over other 3D films they have seen. The ways in which HFR works with 3D was seen to be a factor in generating this visual improvement through the removal of visual artefacts. Together, these filmic attributes of *The Hobbit* were seen to promote a more realistic, immersive and presence inducing experience.

##### Visual Improvement

Results indicate that the vast majority of the respondents felt that HFR improved their overall film experience, whereby 37.44% of respondents felt their experience was 'greatly improved' while 29.64% felt their experience was 'somewhat improved'. However, it would appear that this improved film experience was slightly more complex than these initial results would suggest. When looking at respondents' engagement with HFR, the responses made to the open-ended question 'did the visual impact of the 3D HFR technologies distract you from the narrative at any point?' [Question 10] indicate that 32.71% of respondents required time to adjust to the visuals of HFR before it was seen to a positive film attribute. These respondents

would vaguely comment that they were distracted ‘at the beginning’, or the film felt ‘strange’ but ‘only at first’. While these respondents did not point to a specific technology as inciting this distraction, one respondent did remark that were distracted ‘somewhat because the technology is still new’. Such comments are in line with those who felt HFR was causing this filmic distraction. These respondents would comment along the lines that ‘the crispness of the image felt a bit too realistic for the first 2-3 minutes, then it just felt ‘right’. Despite these respondents initially taking a negative stance toward HFR they ultimately felt the technology enhanced their film experience. What is interesting is that these respondents would go on to comment in a way that echoes responses made to the open-ended question ‘please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug*? [Question 15], where the majority of responses (19.64%) centred on *The Hobbit* being visually enhanced as the film projected a ‘sharper, crisper picture’ that ‘was clearer compared to standard 2D’. Others were more detailed in their responses and would point specifically to HFR as inciting such improvements.

Of those who referred to HFR directly, they would comment along the lines that ‘HFR made every single image extremely fluid and so clear’, or ‘the clarity of the picture is perfect, it is visually much more enjoyable’. Respondents would also remark about *The Hobbit*’s screen clarity, often invoking a cause and effect relationship whereby such clarity enabled a greater amount of image detail to be seen on screen. It was claimed by some respondents that ‘HFR made details clearer and more visible’, while one suggested that ‘HFR showed so much costuming details that were extravagant and masterfully created. It was very enjoyable seeing these things in HFR that it made me want to watch it again to see more of that detail’. Furthermore, these respondents framed their comments in a way that suggested these HFR visual improvements are being made in relation to standard frame rate films. However, only 4.21% of responses explicitly contrasted their HFR viewing experience with standard frame rate projection. Despite this not being a dominant point in the questionnaire responses, this was a recurrent point made in the interviews<sup>9</sup>. Nonetheless, it is worth noting these respondents’ remarks, as they were very detailed in their comparisons and seem to build on earlier points. As two respondents commented:

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<sup>9</sup> See section 5.1 ‘HFR: Realism, Immersion and Presence’.

When I saw the film in 2D there were certain scenes where it was difficult to see the details, e.g. Smaug destroying Dale, scenes in Erebor when the camera was moving, whereas in 3D HFR these scenes were crystal-clear. This had to do with HFR vs. 24FPS rather than 3D vs. 2D.

When characters are moving quickly, fight scenes or the camera panning across a landscape or epic interior. All of those things are murky, muddy, blurry and vague at normal film rates, lacking the awesome detail that I know the designers put into those film elements. When seen in HFR, a moving camera shows you every detail, your eye can catch each element of a carefully choreographed fight, and all the detail of a vast interior like Erebor or Thranduil's Halls are sharp and clear.

Thus, for these respondents HFR improved their film experience by improving the film's clarity and detail in comparison to both *The Hobbit* 2D 24 fps and standard frame rate 2D film in general.

#### **4.1.1 HFR: Perceptions of Realism, Immersion, Presence and Narrative Transportation**

The above responses illustrate the positive impact that HFR was seen to have on these respondents' cinematic experience. Their responses also highlight a recurring discourse that appears to centre on image clarity and detail, possibly facilitated by the absence of visual artefacts. While such improvements were seen to enhance these respondents' film experience, for other respondents these improvements in image clarity and detail made for a more realistic and immersive film experience. The quantitative data also shows that 34.33% of respondents felt HFR made *The Hobbit* significantly more realistic, while 31.82% felt it created a somewhat more realistic film. Furthermore, without referencing 3D or HFR technologies, 34.88% of respondents felt strongly immersed in the film while 29.30% felt somewhat immersed. Qualitative data shows that 30.91% of respondents felt that improvements in filmic realism and immersion made for a better film experience [Question 15]. Similarly, in relation to the open-ended question 'Did the visual impact of the 3D HFR technologies distract you from the narrative at any point?' 25.23% of respondents indicated that these feelings of increased realism, immersion and presence also aided narrative transportation. Some of the responses made in relation to both aforementioned open-ended

questions would simply infer that the technology made the film 'more real', or that they 'felt a much stronger part of the movie, rather than just being in the audience viewing a movie'.

A small number of respondents (14.80%) felt that the technology elicited more than feelings of increased realism or immersion. This particular group felt as though they were physically present within the film. Despite this group of respondents being small, it is worth noting as Michelle et al. (2015, p.14) found with their respondents that 'HFR enhanced their perceptions of textual realism and their feelings of physical presence within the 'world' of Middle-earth'. In the present study, some respondents did not leave any suggestions as to what lead them to have felt present within the film. These respondents would typically remark that 'it's like standing beside the character in the room', or 'I feel as if I were IN the movie instead of watching it'.

Other respondents would cite these aforementioned visual improvements of screen clarity and detail as creating a more realistic, immersive and presence-inducing film. These respondents would typically remark that the level of realism in *The Hobbit* was such that it mirrored that of real life: one commented that 'as someone who has been to New Zealand and visited former Lord of the Rings movie locations, natural elements of *The Hobbit: The Desolation of Smaug*, actual trees, mountains and actual set pieces felt very real to me'; another stated that 'the movie seemed more realistic because details were made more visible and it was like actually being there'. In the same stead, these respondents would remark that image clarity and detail provided greater immersive film qualities. As one respondent stated, 'It both immersed me more so in the film, and the smoother movements from the HFR is so solid that you think there are no pixels, you perceive the people or objects are really in front of you'. Such comments are in line with those 5.45% of respondents who felt physically present in the film. These respondents would typically make comments such as 'HFR is so subtle and beautiful during static scenes, but seems to literally pull you into the action when the camera moves, you seem to become one with the camera as opposed to just looking through the lens', or 'It made it come alive, and it made it seem a lot more realistic, as if it was actually happening and you were there with them. It makes it easier for the audience to immerse into and so I enjoyed the HFR'.

There are discursive similarities within the comments made by respondents who felt the film experience was improved by HFR and those who felt HFR made *The Hobbit* a more realistic,

immersive and presence-inducing film. This illustrates that HFR was seen to have a wide-ranging impact on these respondents' viewing experiences, to the point that it was seen to be a filmic improvement compared to past 2D and 3D film experiences. Moreover, it is also clear that these visual improvements enhancing feelings of realism, immersion and presence also aided narrative transportation. One respondent remarked that 'the movie seemed to flow more smoothly and I felt more immersed within the story than the normal frame rate', while another commented 'once used to the lack of blur, strongly associated with cinema, I was deeply immersed. It made me feel like I was closer to the story. It made everything seem more exact and stimulating'.

However, despite the vast majority of respondents crediting HFR for these filmic improvements, such sentiments were not shared by all respondents. As shown in the following section, others took an opposing stance in that screen clarity and detail was commented upon as altering the way Middle-earth was aesthetically presented in a way that some respondents found displeasing, while also exposing visual flaws within the film.

#### 4.2 HFR: A Negative Impact on Audiences' Viewing Experience

HFR technology was seen by a smaller number of respondents (18.66%) to be a visual detraction from *The Hobbit's* film flow and narrative. This visual detraction centred on HFR projecting an image that was seen to be 'cartoonish', 'fake', 'accelerated' and deviating from respondents' visual expectations of what cinema should look like. These respondents suggest that the clarity HFR brings to the film highlights any imperfections in the film, which in turn lead these respondents to engage with *The Hobbit* as being to be less realistic and less immersive.

##### Visual Contrived Aesthetic

Quantitative results indicate that 8.58% of respondents felt HFR 'greatly worsened' the film experience, while 11.86% felt that it 'somewhat worsened' their film experience. In the 18.66% of the comments made to the open-ended question 'please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug?* [Question 15] within that 18.66% of responses centred on the technology visually detracting from the film. Typically, respondents would be somewhat vague in their responses, merely remarking for instance that the film had an 'unnatural' cinematic feel. It was common for respondents to indicate that the film 'looked like a cartoon', 'looked like a soap opera,' or 'looked cheap', while others felt that the film was too much 'like a television adaptation' or 'visually too smooth'. These respondents, in many cases, would go on to comment that these perceived effects distracted them from the film's narrative, but the majority did not point to a specific technology they felt caused this. However, the discourse used by these respondents is similar to those who pointed specifically to HFR as causing an unnatural cinematic feel. One of these respondents comments that 'the HFR movie looked to me like it would be totally computer made and like a video game... I was often focused on the HFR effect and not the story itself', while another stated that 'the HFR took my attention away from the film itself. I thought it made the film look cheap'. HFR was also seen to alter the playback of the film to the point that character movements and the pace of the film appeared to be too fast, as one respondent commented: 'When the barmaid brings Thorin his drink and the camera moves closer to him at his table, his movements and interaction with her, as well as the movement of the camera, seemed as if the film were playing at an accelerated speed'. It was also purported by the respondents that the increased

frame rate meant that any inconsistencies within the film's prosthetics were further emphasized. Typically, these respondents would make comments such as with 'HFR you notice far more imperfections rather than at standard 24 frames. I feel like you need far more superior attention to detail when filming in HFR', or 'one of the unsettling things about HFR is that prosthetics/make up are significantly noticeable and look fake'. Thus, for these respondents HFR made prosthetics and any imperfections within them more visible. In turn, these respondents would typically 'start to track them [visual imperfections] instead of enjoying the story'. An interesting point here is the way that respondents would comment about HFR making the prosthetics look 'fake' and more 'noticeable' as compared to 24 frames per second films. It would appear that the problem of prosthetics being perceived as visibly 'fake' may lie within the difference in image projection between HFR and standard frame rate. More weight is added to these ideas by recent research; Michelle et al. (2015) found that 'the cinematic illusion that generates perceived realism was disrupted as the technologies failed to achieve a convincingly realised world, making it impossible to sustain disbelief' (p.20), possibly because 'there were moments when narrative immersion was disrupted as the artifice of the film became more apparent' (p.18). Thus, aspects of the film appear hyper-realistic as they do not fit with the natural backdrop in which they are placed.

#### **4.2.1 HFR: Hindering Realism and Immersion**

Quantitative results also indicated that 8.93% of respondents felt that HFR led to much 'less realism' in *The Hobbit*, while a further 11.60% felt that HFR 'somewhat lessened' their perceived sense of film realism. Within the responses made to open-ended question 15, 15.9% of responses centred on a decreased sense of realism and immersion. The visual difference that respondents see between HFR and standard frame rates appeared to have created this decreased sense of realism. One respondent remarked: 'if I can choose, I will always opt to watch *the Hobbit* movies in 2D. It feels much more realistic to me when it is gritty and not so bright, like in *Lord of the Rings*'. These respondents would also use the *Lord of the Rings* trilogy as a 'benchmark for assessing the success of *The Hobbit's* technological innovations' (Michelle et al. 2015, p.21). One respondent noted that 'I felt like it exposed its weaknesses more than in *Lord of the rings*' or 'It made the environment and characters look false and to 'fantastical', especially compared to *The Lord of the Rings* which was much more realistic and felt much more real'.

Such a position appears to be in line with the small number of respondents who made comments about hyperrealism within the film. These respondents would make broad comments about *The Hobbit* appearing hyper-realistic. One noted that ‘it felt like you were actually there watching it happen. You go to the movies to see a movie, not to watch something which looks so real that it comes off cheap’. Or as another respondent commented, ‘I did not feel like I am watching the movie, I felt like I’m watching a documentary about Middle-earth’. While these respondents would not attribute this feeling to a specific technology, their comments are in line with those 19.64% of respondents who felt HFR removed the screen as such and replaced it with a window into Middle-earth. However, for these respondents, the filmic realism is ‘too real’ and in doing so *The Hobbit* has lost its sense of realism. This may be due to ‘it being too real for watching something we know is not there, and there’s a disconnect because of that’, or possibly because it was seen by some that ‘HFR removes the veil of romantic fuzziness’.

While there is a clear discourse here that reflects a negative engagement with HFR as being ‘too real’, the underlying point that these respondents appear to make is that they are still viewing this as a new and different technology. Some are keenly aware of that and profess that it has taken them time to adjust to this new picture presented on screen. Thus, the respondents who have taken a negative stance toward HFR may have done so because HFR presents a new cinematic visual that is different from their previously held expectations of how film should aesthetically appear. Furthermore, as the subject matter of *The Hobbit* is one that for some of these respondents draws upon previously held expectations established with the Lord of the Rings films, it may be that HFR presented a Middle-earth world that looked different to what they expected. Similar responses have been noted by Michelle et al. (2015), some of whose respondents felt that *The Hobbit: An Unexpected Journey* and *The Desolation of Smaug* looked ‘artificial and cheap’. For these respondents, the films ‘lacked authenticity and believability both internally on their own terms, and in their intertextual relationship to characters, settings and objects associated with the “lovingly handcrafted” LotR film trilogy’ (p.21). However, despite this contingent of the respondents feeling that HFR presented Middle-earth in a way that was not in line with their expectations, many other respondents felt that 3D effects helped create a more realistic and immersive version of the Middle-earth world they have come to love.

#### 4.3 3D: A Positive Impact on Audiences' Viewing Experience

The vast majority of respondents (59.68%) felt that 3D HFR technologies helped make *The Hobbit* a better film than other 3D films they have seen, for a number of reasons relating to the ways in which 3D effects were implemented in *The Hobbit* along with the fact that it was filmed specifically in stereoscopic 3D. Furthermore, the way in which 3D was used to establish depth and volume in the film was also seen to increase respondents' sense of realism and immersion.

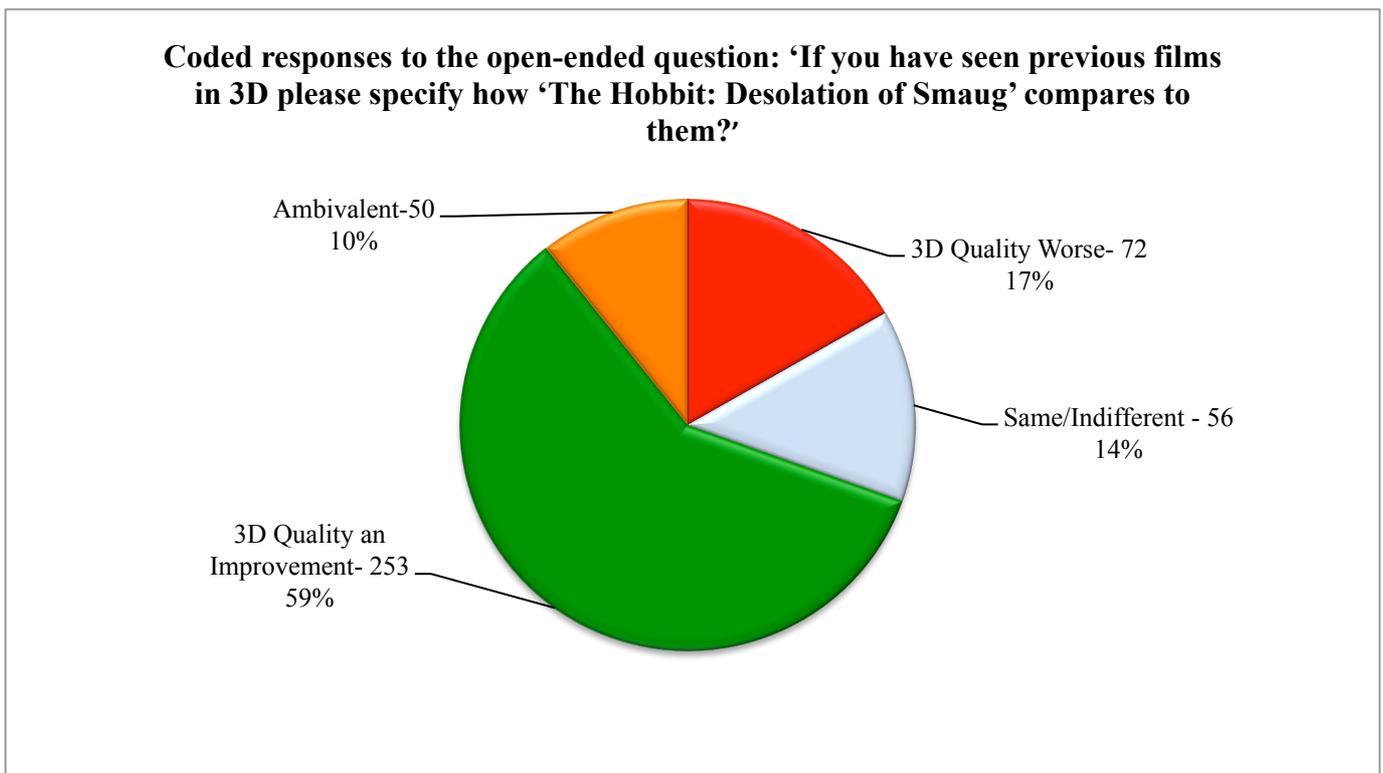


Figure 2: Coded responses to open-ended questionnaire question 14

A section of the questionnaire asked respondents to estimate how many 3D films they have watched. It would seem that the majority are well versed in watching 3D films, with 20.3% having watched 1-5 3D films, 27.73% watching 6-10, 19.72% having seen 11-15, 9.09% watching 16-20 and 23.42% having watched more than 20 3D films. High viewership of 3D films may be due to the fact that respondents indicated that when watching a 3D film as compared to a 2D film they experienced increases in visual stimulation (30.76%), entertainment (21.04%), narrative engagement (17.22%) and feeling transported/emotionally engaged with the narrative (17.22%).

Furthermore, initial quantitative results indicate that the vast majority of the respondents feel that 3D technology improved their overall film experience: 31.94% felt that 3D greatly improved the film experience, while 39.20% thought the experience was somewhat improved. Insight into the key factors contributing to this positive response can be found in the responses to the open-ended question, 'If you have seen previous films in 3D please specify how *The Hobbit: The Desolation of Smaug* compares to them?' [Question 14]. The majority of respondents felt that the 3D was utilized in better ways than in other 3D films, with one remarking that *The Hobbit's* 3D had a 'greater focus on positive parallax rather than negative parallax'. Another respondent commented that 'it is much more grounded as it doesn't rely on throwing things out of the screen, the 3D is used more to produce an additional depth to the film'. Other respondents also noted that *The Hobbit's* 3D stayed away from using overt negative parallax. These respondents made comments about how 'the 3D aspects were well done and not over done [sic], which is a typical problem', or alluded to this by saying 'it was more subtle than other films'. Thus, the respondents illustrate an ability to identify how *The Hobbit's* 3D effects had improved their cinematic experience based upon what the effects did *not* do, typically in relation to previous 3D film experiences. In doing so, there is a seemingly clear consensus that with regard to 3D effects, 'objects flying at your face seems more and more to become something of the past. In my opinion, most films now establish that 'in-depth' feel'.

It is also interesting to note that in the minds of albeit a small proportion of the respondents, *The Hobbit* being filmed in native stereoscopic 3D was a factor in it being a better 3D film than others. This group made comments such as 'it did make a change that they actually filmed it in 3D'. Furthermore, these respondents would point specifically to *Avatar* as a key reference point. *Avatar* was filmed in 3D and is still regarded as the best stereoscopic 3D film by many, and as a 'tent pole' film. As Burnett asserts:

*Avatar* is such an important example of the medium's growth...its core story has been told many times, but crucially not in this way. The film is an exploration of a new frontier...to create not only a synthesis of the real and imaginary, but also synthetic worlds that have credibility. (2013, p.209)

These respondents made comments along the lines that *The Hobbit* ‘compares favourably with *Avatar* and really stands out from the post converted releases’, and ‘filming *The Hobbit* films in 3D was a brilliant idea, as conversions are usually pretty mediocre... the 3D in this film was reminiscent of James Cameron's *Avatar*’. In some cases it is not entirely clear if these respondents feel *The Hobbit* is a better film compared to all other 3D films or just post-production 3D films; however, such a position further reiterates the resonance that *Avatar* had with these respondents.

### 4.3.1 3D: Perceptions of Realism, Immersion and Presence

The majority of these respondents also felt that *The Hobbit's* use of 3D technology lead to greater perceptions of realism, whereby 27.24% of respondents felt the film was 'significantly more realistic', and 38.85% thought it was 'somewhat more realistic'. By the same token, 54.88% and 29.30% of respondents respectively felt that they were 'strongly immersed' and 'somewhat immersed' when watching *The Hobbit*. Moreover, it was these perceived improvements in cinematic realism and immersion that many held responsible for improving their filmic experience. What this qualitative data reveals is further illustrated by responses to the open-ended question: 'please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug*'? [Question 14]. There was a clear precedence placed on the 3D technology having 'made it a more 'real', although these comments were vague and did not indicate the ways in which the 3D made the film more real. However, a host of respondents felt that the 3D made the film realistic as it provided a greater sense of the depth. One respondent commented that 'It seems all space is more enlarged and has enormous depth. 3D gave me more intensive feelings'. Another suggested that 'it does feel a little more real and alive; I enjoy 3D films except when they show it off too much'. In turn, many felt that such effects further immersed them into the film, making a number of respondents feeling 'part of the movie, rather than just being in the audience viewing a movie' or as another respondent suggested, watching *The Hobbit* 'did not feel like I was watching a 3D movie. It felt so natural. I was part of the landscape, I could reach out and tug Gandalf's beard'. As above, respondents seem to reference improvements in realism and immersion deriving from what the 3D effects did not do, and for 11.07% of the respondents *The Hobbit's* avoidance of overt use of negative parallax helped create a more realistic and immersive film. As one respondent put it, 'It felt like the users of the 3D technologies in *The Hobbit* have a more technical and creative understanding of these tools and utilize them in such a way as to enhance the movie watching experience'.

While the vast majority of respondents felt the 3D effects were implemented subtler than other 3D films a small number of respondents did feel that the 3D effects were still nothing but an obtrusion into their film experience.

#### 4.4 3D: A Negative Impact on Audiences' Viewing Experience and Narrative Transportation

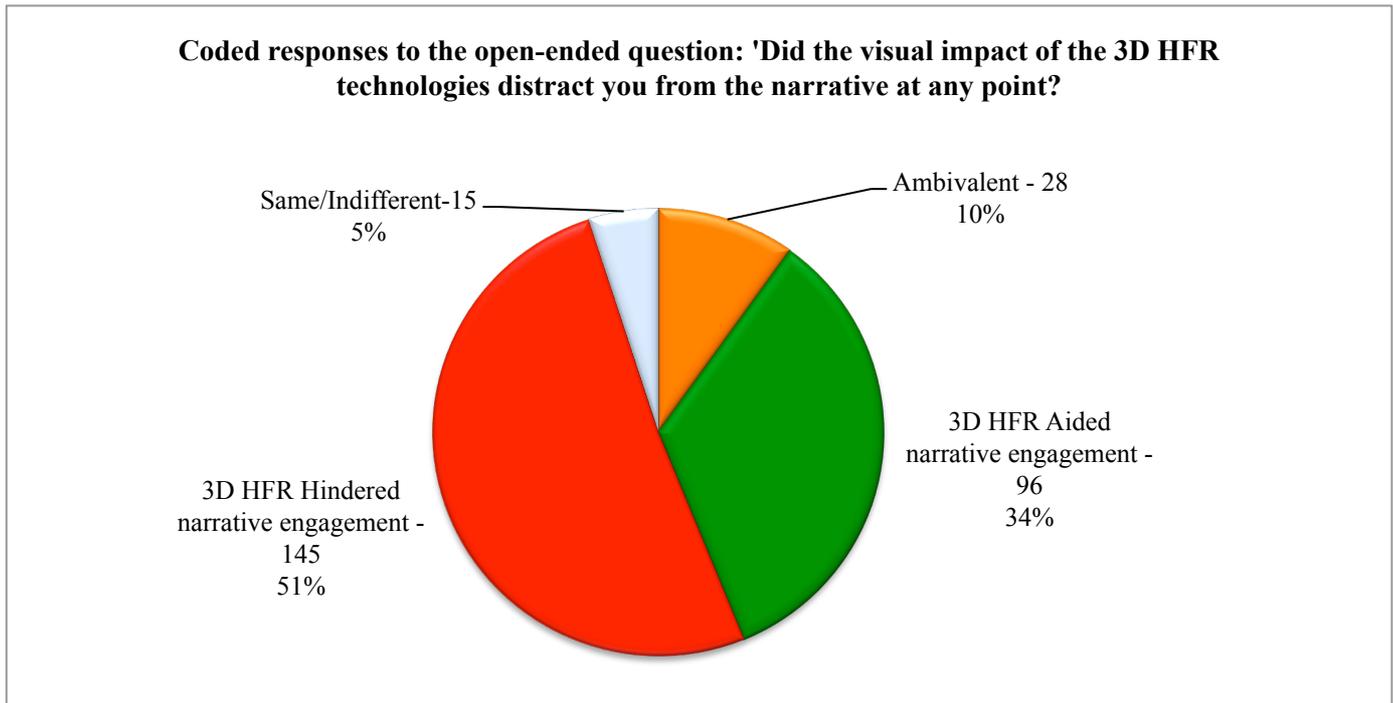


Figure 3: Coded responses to open-ended questionnaire question 14

In contrast to those views discussed above, 4.48% of respondents felt that 3D and HFR 'greatly worsened' their film experience, while 10.03% felt that 3D and HFR 'somewhat worsened' their film experience. 5.73% and 10.06% of the respondents respectively indicated that 3D made the film 'much less realistic' and 'somewhat less realistic'. Insight into why these respondents took such a stance can be gleaned from responses made to the open-ended question 'please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug*? [Question 15]. Of these respondents, 18.66% indicated that the 3D HFR technology detracted from the film experience. This was mainly attributed to 3D creating visual distractions, as the majority of these respondents felt that *The Hobbit's* use of 3D effects at times was 'gimmicky'. Respondents would commonly remark that the film was 'over-saturated with effects', or '3D was used to "wow" the viewer but it tends to draw me out of the story'. Points such as these are echoed in the comments made to the open-ended question 'did the visual impact of the 3D HFR technologies distract you from the narrative at any point?' [Question 10] whereby 12.39% of responses centred on 3D technologies interfering with narrative transportation.

For these respondents, the overt spectacle of the 3D may have detracted from the film experience and narrative because such an overload of visual stimulation meant that ‘there was so much going on it was impossible to focus on anything’, or as one respondent suggested, ‘3D HFR was too much, and had an overall feel of one big blur of the same footage’. Moreover, and contradicting the views of others (outlined above), these respondents were critical of the overt use of emergent effects, ‘where an object was obviously being thrust/projected towards the camera for effect, [this] brought me straight out of the narrative’. By the use of words such as ‘thrust’ and ‘projected toward the audience’ it seems as though these respondents are alluding to a distraction that was unavoidably forced upon them by the negative parallax 3D effect.

However, some respondents were distracted by more subtle use of emergent effects. As one respondent commented, ‘even with just scenic moments, I was distracted from what was happening in the story by focusing on some tree branches and thinking "Oh, look at the 3D"’. Here, the tone of the comments changes as the respondents seem to allude to a subtler and almost pleasant distraction whereby the technology may be allowing a greater amount of nuance and visual stimulus to be present on screen, meaning that respondents themselves were becoming distracted from the narrative as they explored the visually dense aesthetic. This is epitomised by the comment, ‘I found myself peering here and there at different things on the screen, rather than just 'seeing everything at once' and being able to lose myself in the story’. Thus, the way that these respondents would typically comment that they were ‘peering here and there’ and becoming distracted suggests that any distraction derived from their own interest in exploring the on-screen world presented, whereas the respondents critiquing the use of overt emergent effects are seemingly distracted by what the film *forces* them to see. While the common denominator of being distracted from the narrative by 3D is still at the forefront for these two groups, there is a difference in how the 3D effect is creating a visual distraction for these two groups of respondents.

Furthermore, another reason why these respondents felt 3D effects visually detracted from the film derives from ‘camera shots going through people’s legs, or between branches with things flying at you’, which was seen to take respondents ‘away from the story, instead of enhancing the experience’. One respondent explained it as ‘the camera being constantly moved to provide the parallax effect. When watching in 2D it becomes obvious that there is always a little bit of movement and few still moments’. While such a point was not overtly

prevalent among the questionnaire responses, it was a point that was evident within the interview responses<sup>10</sup>.

There was also a contingent of respondents (13.10%) who felt that the 3D was largely imperceptible during their viewing of *The Hobbit*. These respondents felt that they ‘didn't really notice the 3D at all in *The Hobbit*’, or suggest that there were ‘no effects, it was not enough change to be noticed clearly’. The lack of 3D effect left one respondent musing: ‘I often wonder why I paid extra to watch the same exact movie as 2D, but with the words popping out and a pair of shades’. Similarly, 16.33% of responses made to the open-ended question, ‘If you have seen previous films in 3D please specify how *The Hobbit: The Desolation of Smaug* compares to them?’ centred on *The Hobbit* being a worse 3D film than others they have seen. A number of these respondents made comments such as they ‘try to avoid 3D as often as I can because I dislike the result and find it distracting’, or ‘I keep being dragged to see 3D films with promises that "this one is better" or "this one is different" suggesting that these individuals’ take on a 3D film is tainted before they have even watched it. The vast majority of these respondents made comments to the effect that *The Hobbit* was ‘woefully inferior to even older films’. As one of these respondents remarked, ‘*The Hobbit* relied too much on looking good, or rather attempting too, [rather] than focusing on the story and characters. It was all gimmicks and going for the awe-factor’. Thus, such comments appear to be echoing sentiments reflected above. However, a small number of respondents felt that *The Hobbit* was better than the majority of other 3D films except for a select few, which were typically either *Avatar* or *Gravity*. These respondents would make remarks such as *The Hobbit* was ‘better than many other films that I've seen, but not on a level with *Avatar* which is still the best’. Clearly then, some of these individuals did not feel that *The Hobbit* represented a bad 3D film per se, but rather that ‘*Avatar* is still the bar’ or ‘perhaps the only film that was better was *Avatar*’.

Such an opinion toward the obtrusive nature of the 3D effects seems to have arisen because were seen as being unsuited to the genre of *The Hobbit*. Respondents would typically make comments such as this one:

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<sup>10</sup> This point is discussed further in section 5.4 3D: Technology ‘At Play’.

I'm not sure whether 3D is that much important to movies like *the Hobbit*. I think we have to consider the story of Tolkien's book *The Hobbit*. He created a much more charming and friendly world compared to the *Lord of the Rings*, which was somewhat dramatic and huge. In movies like *Avatar* the 3D technology really supports the scenery, however in *The Hobbit* I don't think it is necessary.

In *The Hobbit*, the 3D was unnecessary. I watched in both 3D and 2D, and preferred 2D. A slower, calm landscape would have supported the story better, I think. 3D made it feel over-done. Other films with 3D, where it has actually worked, are very few. *Avatar* worked, because it made sense to the story. Many 3D films would work better as 2D.

Thus, the impression is given that for these respondents, the technology may not be a negative, but rather an unwarranted addition to a film such as *The Hobbit*. This is further illustrated by the respondents who remarked that the 'technologies become more important than the fundamental story' or that the technological effects are nothing but 'visual eye-candy and no more, that does not impact on the narrative'. It may be that the outright presence of 3D rather than overt emergent effects is the issue. Two respondents further illustrate such a thought:

Sometimes focus would become more aimed at the technology, for me, than following the story or considering what was actually happening. An example could be the river scene, it became more about the fun of making it, than what the characters were going through at that point of time in the story. But at other times the 3D HFR was great like in the spider scenes in Mirkwood.

If something was made 3D then I focused on it even if it was not the main character or most important part of what was happening on screen. At times, I missed character facial expressions and was less tuned into what they were saying as I ogled the 3D stuff instead.

The ways in which these respondents suggest that the 3D effects were not seen as being obtrusive in the sense that effects were 'thrust' or 'forced' into negative space and seen as a distraction to the film experience and narrative. Here, however, precedence is seemingly

placed on 3D being the ‘focus’ of the film whereby respondents are not necessarily overtly distracted by 3D projections, but nonetheless are still drawn away from the narrative. It may be that this shift in filmic focus reminds the respondents that any 3D effects are constructed cinematic effects which make it difficult for respondents to ‘forget they are sitting in a cinema, and to identify with the characters’ (Asselin and Gosselin, 2013, p.134) and in doing so such a conscious thought made in observing this may break filmic immersion and hinder narrative transportation as the illusion presented by the 3D effect ‘automatically lead to a questioning on the part of the viewers...[where]...the fusion of theatre and image do not occur’ (Asselin and Gosselin, 2013, p.134).

Thus, there were clear aspects of *The Hobbit’s* 3D that respondents felt either aided or detracted from the film. However, there is crossover in that others saw what some respondents characterized as being ‘subtle’ use of 3D as being not subtle at all. Thus, the ways these respondents engaged with *The Hobbit’s* 3D is certainly an issue that is complex<sup>11</sup>. This complexity is further illustrated in the responses made regarding 3D HFR’s impact on the film’s CGI.

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<sup>11</sup> A small number of the respondents were distracted from the film because of the 3D glasses intruding upon their film experience. Such comments are exemplified by the respondent who stated ‘I also find that it is really hard to ‘forget’ that you are wearing the glasses. I am constantly aware of them during the film. Also, it is very awkward for people who already wear glasses’.

#### 4.5 CGI 3D and HFR: A Positive Interaction

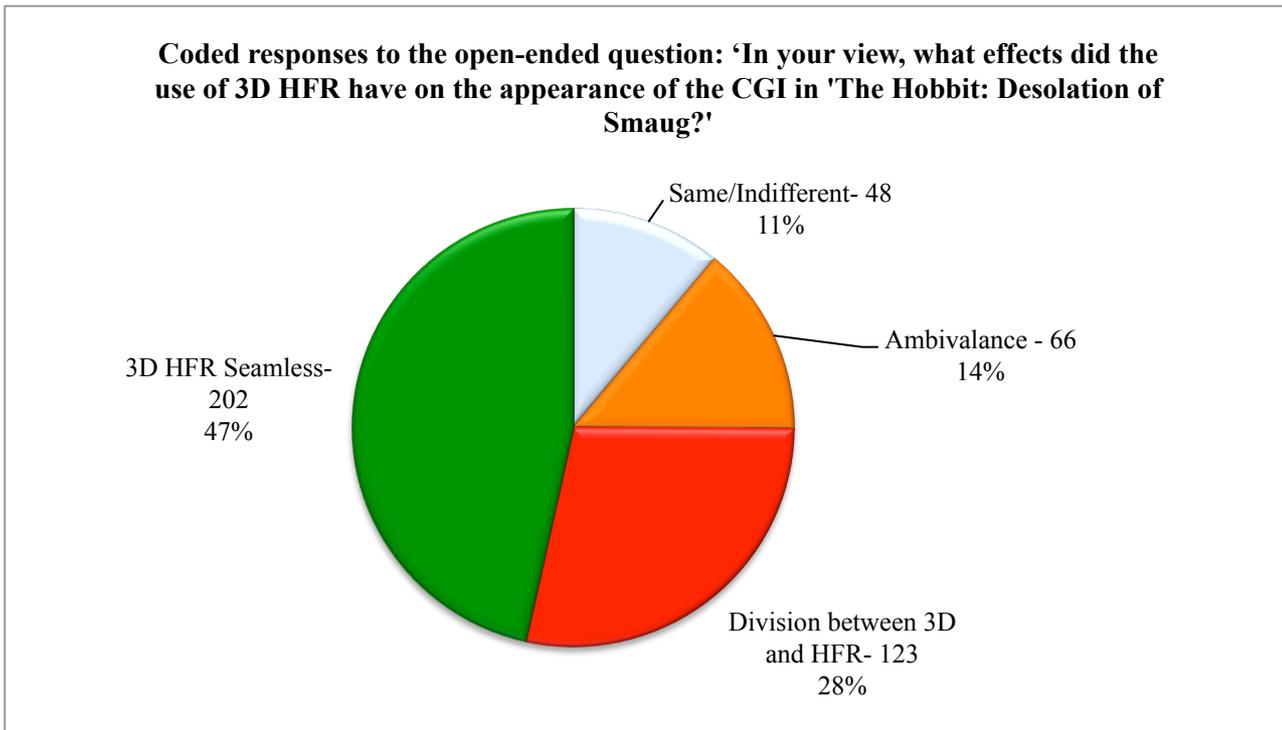


Figure 4: Coded responses to open-ended questionnaire question 13

Many of the respondents felt that the CGI within *The Hobbit* was completed not only to a high industry standard, but one that some saw as surpassing industry standards. Quantitative data reveals that the vast majority of respondents (62.54%) ranked the CGI quality in *The Hobbit* as being very good, while 23.53% rated the CGI as being good. Within a given month 37.98% and 33.64% of respondents respectively would watch 1-2 and 3-5 films that contained a significant amount of CGI, while 12.64% and 10.70% would watch 6-10 and 10 or more such films, while 4.03% claimed to watch no films containing a large amount of CGI. Thus, the majority of respondents appear to be well versed in engaging with cinematic CGI on a regular basis, and in turn are possibly quite adept at critiquing cinematic CGI.

#### A Seamless Interaction of Technologies

With regard to the question: 'In your view, what effects did the use of 3D HFR have on the appearance of the CGI in *The Hobbit: The Desolation of Smaug* [Question 13], respondents indicated that the 3D HFR technology worked harmoniously together with the CGI to visually enhance the film in a number of ways. Often, these respondents would simply infer that the 3D HFR made the CGI a 'great effect', or that 'the CGI looked more impressive' or

that ‘it made it become very realistic’. But, while interesting, these comments do not tell us why the 3D and HFR technologies may have impacted on the CGI in these ways. A large number of respondents pointed to HFR as aiding the CGI by improving its on-screen movement and integration into the film. Of those who referenced the CGI’s movement, some made comments that ‘the CGI was more fluid and realistic’, while others remarked that ‘the CGI moves smoother because of the increase of frame rate so the movement is more realistic, and enforces the illusion that the CGI characters are real’. Furthermore, respondents also credited HFR with making the CGI clearer, more detailed and sharper.

Comments such as these were particularly prevalent with regard to HFR’s impact on the CGI within rapid action scenes. Typically, ‘fight’ scenes were instances where ‘HFR was seen to benefit the CGI characters as they rapidly move across the screen’. Thus, there are distinct differences in the ways these respondents viewed and interacted with HFR and in their views on how it impacts on CGI, although it seems the majority of these respondents feel CGI and HFR are two technologies that meld seamlessly together. It is interesting to note that the positive impact HFR’s screen clarity, detail and fluidity were seen to have on the CGI are similar to the reasons why HFR was seen to have improved respondents’ film experience and created a greater 3D film than ones previously seen.

#### **Smaug: the CGI Standout**

While many of these respondents felt that HFR improved the overall quality of the CGI, it was seen to have had an even greater impact on the CGI used to create Smaug. Some respondents commented that ‘most of the movie appeared to be improved by HFR, especially with the CGI of Smaug’, or that ‘it made the effects stand out all the more, particularly the more impressive pieces such as Smaug’. Thus, there is a feeling that Smaug stands out as an iconic character in the film, as these respondents would comment about the CGI in *The Hobbit* and the CGI of Smaug as two distinct categories of visual effects.

Digressing slightly to address those respondents who took an ambivalent stance on the effects of 3D HFR on CGI helps to further illustrate this point. These respondents felt that 3D, HFR and CGI did not work together seamlessly throughout the film. These respondents made comments such as ‘it made it look extremely realistic, while on some occasions it revealed [the CGI] as too sharp and unrealistic’. What is more interesting about these particular

responses is that a number of those who apparently took a negative stance toward 3D HFR and its effect on some of the film's CGI were quite positive in their stance toward the technologies' effect on Smaug. Typically, these respondents would comment that some aspects of the CGI were poor, referencing in many cases the orcs and villains, before specifically praising the technologies' effects on Smaug. The comment 'I thought Smaug was truly magnificent, while some of the orcs and other creatures did not reach the same level of realism' embodies this view.

Moreover, some of the respondents felt that the HFR was responsible for inconsistencies in the quality of the CGI, with some making comments along the lines that 'I felt that the HFR made the CGI a little disengaging' before proceeding to suggest, for example, that 'some of the characters like Azog and Bolg were too "fake" for me to think of them as serious villains, however the HFR with Smaug himself made it beautiful'. In another case, a respondent remarked that *The Desolation of Smaug* is above average, but still not perfect. Things that were a major focus, Smaug, were flawless'. These ambivalent responses highlight polarized reactions to the CGI in *The Hobbit*<sup>12</sup>; however, they also suggest that Smaug was a piece of CGI that was broadly positively received by the respondents.

Thus, it is evident that for some respondents, Smaug was a much-anticipated element of the film. For some, this anticipation was grounded in nostalgic reasons, as with one respondent who commented that 'I had read the book as a child and I imagined Smaug to be considerably smaller and then, in the cinema, I saw this massive dragon which I would never have held possible to move so realistically'. Others expressed a similar element of prefigurative expectation specifically related to the creature realization of Smaug: 'Smaug was incredible in every respect - everything I hoped he would be'. Whereas for others, scenes with Smaug stood as 'the diamond moment in the film' because respondents were keenly aware that 'that was where their time and energy went, with Smaug'. Respondents commented about the realism of Smaug, remarking that 'his scales, wings, talons were just so real', or that 'Smaug seemed so huge and alive'. Others commented that 'the movements of Smaug came across as more fluid and beast like, with the CGI of Smaug there seemed to be more detail and less blurring than I expected during those portions'. Comments such as these last two are in line

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<sup>12</sup> Respondents' reactions to 3D HFR technologies negative impact on CGI is further addressed in section 4.9 'CGI, 3D and HFR: An Ambivalent and Negative Engagement'.

with remarks made regarding the perceived effects of HFR on cinematic images, which adds weight to the claims of respondents who commented that ‘the scenes with Smaug were astounding and HFR really helped to make the 3D convincing’. However, the recurrent point made related to the impact that 3D had on Smaug. It was typical for respondents to remark along the lines that they were ‘really glad to see Smaug in 3D because there were shots where I felt like I could reach out and touch his scales, and when he breathed fire for the first time that kind of made me flinch’, or ‘3D helped to give it a sense of weight, and of presence in real space with Smaug’. 3D was seen to affect the CGI of Smaug positively because ‘It felt like he was coming out of the screen. I bought the fact that he was realistic, if dragons existed he would move and look like that’. Thus, it is evident that these respondents engaged with the impact of 3D HFR technology on the CGI in complex ways; however, there are commonalities in that the reasons pointed to as to why the CGI was purported to be ‘good’ CGI lay within the fluidity of the CGI’s movement and its detail and clarity, similar aesthetics that have been pointed to by respondents as aiding *The Hobbit* in instances beyond 3D HFR’s interaction with the CGI.

#### 4.6 CGI, 3D and HFR: An Ambivalent and Negative Relationship

##### Technologies as Disjointed

Michelle et al (2015, p.2) make the point that ideally within film, ‘the layering of what is real and what is artifice will be rendered seamlessly on screen, such that viewers cannot distinguish digitally-created or enhanced characters, objects and settings from real-world ones’. However, responses to the open-ended question ‘In your view, what effects did the use of 3D HFR have on the appearance of the CGI in *The Hobbit: The Desolation of Smaug*?’ [Question 13] illustrate that this technology was not rendered seamlessly in the film. Of responses, 17.01% expressed an ambivalent stance whereby 3D HFR technologies were seen to be a positive attribute for the wider film, but as having a negative impact on the CGI. One prevalent respondent position was that HFR was a ‘huge improvement to cinematic 3D by making camera moves smoother and retaining depth [but] the difference between CGI studio and location shots became very apparent’. The latter part of this response is further echoed by the 26.53% of respondents who felt that 3D HFR did not work seamlessly with the CGI. A large portion of these respondents claimed that the CGI was noticeably visually contrived. These respondents would comment that the CGI resembled a ‘video game’, looked ‘cartoonish’ or was ‘less realistic’ and ‘fake’. It was unclear whether respondents attributed these effects to 3D or HFR, although a number of them commented that the CGI ‘was too glossy’ or ‘too clean’, in line with the negative effects that 18.66%<sup>13</sup> of respondents felt HFR brought to the film. These respondents would frequently make comments such as ‘It made me more aware it was CG’, or that ‘It made the CGI more obvious’.

Further insight can be gleaned from comments made by a contingent of this group who felt that the greater clarity and detail revealed by HFR accentuated the CGI as well as any flaws in the CGI. Respondents would typically write that ‘the sharpened clarity with HFR causes any flaws in the CGI to be more noticeable’, or that ‘it did seem like CGI needs some extra work to catch up to the higher frame-rate’. This may be why it was often purported that ‘HFR made CGI stand out a little more as not being part of the world around it’. Michelle et al. similarly found that ‘numerous respondents stated that the CGI was too clearly apparent and

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<sup>13</sup> These points are discussed further in section 4.2 ‘HFR: A Negative Impact on Audiences’ Viewing Experience’.

noticeable in places...scenes and characters appeared fake, undermining the credibility and believability of the film's rendering of Middle-earth' (2015, p.22).

Moreover, these respondents would often reference their experiences with CGI in older 24 frames per second films or the *Lord of the Rings* trilogy. Many of the respondents felt that the CGI in the *Lord of the Rings* trilogy filmed in 24 fps seemed more realistic, as these older formats were better able to hide any CGI inconsistencies. A number of respondents commented that '24FPS is certainly a lot more forgiving' than HFR because it has a 'gritty realism', a recurrent term used by these respondents to describe 24 fps film. It may be that as HFR is seen to project 'images too sharp and shiny... it loses the gritty real world feel Lord of the Rings has', or that 'non gritty animation and makeup effects clearly take me out of the movie'. The way these respondents describe HFR's impact on the CGI appears to centre on HFR making it look noticeable different from their expectations, which were derived from the *Lord of the Rings* films. As one particular respondent commented:

When I say that the 3D HFR made things more realistic I do not mean that in a good way. It was more obvious that I am watching a movie. I may as well be right behind the camera operator and focus puller watching each take. So, does this make things more realistic? Yes. More naturalistic? No. More compelling? Certainly not. There is an art to the cinema that relies upon not showing too much and certainly not everything.

Thus, it may not be a problem in realism but rather a problem with the CGI appearance being different to previously held expectations, as the grittier filmic feel the *Lord of the Rings* films and 24 fps film is seen to be taken away by HFR. Such an idea is further illustrated by other respondents who remarked, 'as a huge fan of both the book and films, I'm certain I'd enjoy the film just as much as if I had watched it in normal 2D', or that 'the story and world of *The Hobbit* is one that greatly appeals to me. I have a feeling I would have loved it just as much in black and white for that matter'. The movie and story on its own are engaging to me'. Thus, there may be a point to be made regarding respondents' fandom and the ways in which such a variable impacts on the ways these respondents viewed and engaged with the film.

#### 4.7 General Response Trends

To conclude this chapter it is interesting to note that there are evident responses trends across the questionnaire where respondents would typically take similar stances in responding one open-ended question to another. Of the respondents who were positive toward the open-ended question: ‘please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug*? [Question 15], the majority went on to answer the remaining open-ended questions a positive way. Thus, it would appear that those respondents who took a positive stance toward the overall effect of the 3D HFR technologies on their filmic experience were more likely to feel that the technologies positively impacted the film in these other ways. It is also interesting to note that screen clarity and detail, along with the removal of motion blur, were recurrent points made by these respondents across the four open-ended questions. In a similar fashion, of those who responded negatively to Question 15, they would answer the remaining questions in a negative way.

Between these poles, the respondents who were ambivalent and indifferent toward 3D HFR and its impact on their cinematic experience were quite divergent in their responses across the remaining the open-ended questions. Respondents were both less ambivalent and indifferent when comparing *The Hobbit* with other 3D films [Question 14], whereby the majority of these respondents went on to be positive in their comparisons of *The Hobbit* with other 3D films. It would seem that the respondents who were ambivalent toward 3D HFR’s effect on their cinematic experience were more decisive in their thoughts toward the technology’s effect on the CGI, where a third of respondents felt 3D HFR and CGI melded together seamlessly. Also, the vast majority of these two groups of respondents went on to remark that the technology hindered narrative transportation. These patterns across the responses to the open-ended questions showcase several points that are worthy of note. Of those respondents who were negative in their thoughts toward 3D HFR and its impact on their filmic experience [Question 15], their negative stance was continued in consequent questions, especially toward 3D HFR and the impact it had on the narrative [Question 10]. Even for those respondents who were positive, ambivalent and indifferent toward the technologies’ effect on cinematic experience were more inclined to take a negative stance to the technologies’ effects on narrative. Thus, despite there being such positive responses for 3D HFR’s impact on cinematic experience, interaction with CGI and improvements to 3D films more generally it

is curious that there was such a prevalent shift regarding the negative effect that 3D HFR was seen to have on the narrative.

In relation to these four audience positions (positive, negative, ambivalent and indifferent) the gender breakdown is largely representative of the total percentage of males (66.03%) and females (33.97%) that completed the online questionnaire. However, the only deviation came from those respondents whose comments centred on technological detraction. Here, females had a higher level of representation where they constituted 41.25% of responses, while males made up the remaining 58.75%.

Of those respondents who completed the questionnaire, only 24.68% reported to have undertaken an advanced or tertiary level of media education. However, it would seem that the majority of these respondents have taken a similar stance toward the technologies' effect on the film. Respondents with such a level of media education made up over half (57.14%) of responses within the indifferent audience position. Also, nearly a third of respondents who felt ambivalent (31.25) or that the technology detracted from the film (30.86%) have a higher level of media education.

Moreover, 21.97% of the respondents who completed the questionnaire have worked in the film or television industry. These respondents have a notably higher level of representation in two of the potential audience positions. One of those positions is the indifferent category, where respondents who have worked in the film or television industry made up 42.86% of the responses. The respondents who have worked in the film or television industry also have a relatively higher level of representation in the negatively responding audience position, where these respondents comprise 30.38% of the negative responses.

Three particular age ranges were identified as having an increased prevalence within two of the potential audience positions. It would appear that a larger number of 61 plus year olds in this audience sample were indifferent about technology's effect on the film experience. While this particular age range was the smallest group who responded to the questionnaire, constituting only 4.27% of the total responses, they made up 14.29% of the indifferent responses. Within the overall questionnaire the age range of 18-21 year olds was the largest group at 19.27%, however only 11.11% of 18-21 year olds felt that the technology detracted from the film. In comparison, 31-40 year olds were the second most frequent age-range to

complete the questionnaire, making up 18.64% of the respondents, and they were more prevalent within the responses made concerning 3D HFR technology detracting from their film experience, constituting nearly a quarter of the responses at 24.69%.

## Chapter 5: Interviewee Responses

This chapter draws upon the breakdown of potential audience positions that emerged from the analysis of the questionnaire responses. These potential audience positions are further built upon by interview responses where the addition of the interviewees' qualitative data provided more complex and in-depth insights into how respondents engaged with 3D HFR technology and its impact on *The Hobbit*.

The sections of this chapter explore the nuance of interviewees positive, negative, ambivalent and indifferent responses taken toward 3D, HFR and CGI technologies along with the perceived ability for these technologies to work seamlessly together. The impact that these technologies had on interviewees' sense of cinematic realism, immersion and presence are looked at along with these technologies influence on narrative transportation.

Despite the interviewees being diverse in age, gender and geographical location it is evident that they are all similarly literate in Tolkien's *the Lord of the Rings* and *The Hobbit* along with Jackson's films. As such, the affinity these interviewees hold with the Middle-earth franchise appear to have played a part in how these interviewees ultimately engaged with the film, which may have caused some underlying bias in responses given.

### 5.1 HFR: Realism, Immersion and Presence

As previously noted, stereoscopic film has been a part of our cinematic landscape for over a century and within that time audiences have held it in a polarized regard. A format so contentious with audiences lends itself to academic research; however, 'discussions of, or analysis of, stereoscopic 3D technologies has been curiously absent from academic literature' (Johnston, 2012, p.245).

To date, a large portion of academic work on stereoscopy has centred on the format's technological development and theoretical effects on the audience, where ideas surrounding the immersive properties, potential to enhance realism and heighten depth perception are explored. While there has been growth in the area of audience research, within academic scholarship 'there appears to have been little engagement with the rapidly expanding field of experimental research exploring actual rather than theorised audience responses to

stereoscopic 3D' (Michelle et al. 2015, p.). Furthermore, there are apparent limitations to this existing field of stereoscopic 3D research: despite the fact that 'research on stereoscopic projection is ongoing, the impact on audiences of HFR and its possible interaction with 3D has only very recently become the subject of investigation' (Michelle et al. 2015, p.). As such, a new era of 3D HFR film is one that we must address.

As previously noted, a segment of the questionnaire respondents felt the imagery in *The Hobbit* was improved and that the film had a greater sense of realism, immersion and presence. However, these questionnaire respondents did not conclusively reveal the specific technology that they felt played a part in improving their film experience. It was through the interviews that these potential positions could be further explored, by encouraging respondents to identify what in their view was creating an improved film.

Drawing upon the interviewees responses as a whole, a significant number pointed to HFR as being a prominent technology in creating these improvements, and would often refer to these as being improvements over lower frame rate 2D and 3D films. The interviewees seemed to be well versed in identifying and commenting on the affective difference they saw HFR bringing to their *Hobbit* film experience as compared to these 'older' film formats, particularly their experiences with the *Lord of the Rings* film trilogy. As such, these interviewees would point to a number of HFR's filmic attributes as improving the film experience.

In the first instance, interviewees would comment about the overall on-screen clarity that HFR brings to the film:

I far prefer HFR to anything. It allows us to see the detail the excellent WETA designers have put into every.... single.... frame. [Female 22-26]

It might not change other films as much, but for... *The Hobbit* there is so much detail is put into the set, costumes, prosthetics that the HFR really shows off details that might disappear otherwise. [Female 41-50]

While this is an interesting point, interviewees would quickly move beyond this to explain that the film's clarity also allowed for more intricate details of the film's set and design to be

observed. These interviewees felt that being privy to an increased amount of visual detail resulted in a greater sense of realism and immersion as compared to the previous ‘industry standard frame rate’ 2D and 3D films they have watched. It seemed that interviewees take such a stance because they equate the large amount of on-screen detail with mirroring the natural detail that we see in our day-to-day lives, thus potentially creating a parallel in visual realism.

As HFR presents the ability to ‘peek into the corners of the screen to see what little tidbits Peter Jackson adds there’, the filmmakers have allowed these interviewees to see beyond the main focus of a given scene and ‘explore’ the screen and the world it projects in its entirety. As a result, these interviewees indicate a feeling that with HFR their eyes can wander and take in the scenery, making it possible ‘to catch details that were not as sharp in the regular frame rate’:

After seeing that area [Hobbiton, Matamata New Zealand] in person and I know what it looks like, you just don’t get that with regular film whereas with HFR there is a little more... high definition look so it’s more realistic looking...in the sense that you get a glimpse of the real world...it’s not like looking at my fire place right now but it’s got more definition... with the mountains you could see where the different parts of the range were. [Female 41-50]

For *Lord of the Rings* and *The Hobbit*, so much detail is put into the set, costumes, prosthetics that the HFR really shows off details that might disappear otherwise [Female 31-40]

Thus, HFR may enable what might be seen as the subsidiary details of a given scene to have some added prominence, because they are now simply more visible. As one interviewee stated, ‘when the camera is flying over an epic landscape or interior like Thranduil’s Halls, or Erebor we can see, understand, and enjoy ALL the detail wrought by the excellent designers of the film’. In line with the previous comments made regarding *The Hobbit*’s extraordinary film detail, a segment of interviewees would point to long shots especially as scenes where detail seemed to engulf their viewing experience. As such, these interviewees would comment:

It showed so much detail that it made me want to watch it again to see more of that detail. Long shots especially made me wish the shot lasted longer. [Male 22-25]

Thus, these interviewees felt that longer in order to take in all of the detail of the set and location these shots needed to be held on screen for a longer period of time.

Interviewees also noted that increased filmic detail was not limited to the background and set but the characters themselves. For example, one interviewee commented about the realism of Smaug, stating that ‘the intricacies of his facial expressions and how life-like he looked were simply mind blowing. [Female 26-30]

Interviewees who commented about *The Hobbit*'s image clarity and detail having made for greater cinematic realism would usually go on to say that such realistic clarity and detail also made for greater cinematic immersion. These interviewees claimed that the on screen clarity and detail was a central part in drawing and pulling them into the Middle-earth world that Jackson has created. As one interviewee commented, she felt as though she may be more immersed in the visual presentation in *The Hobbit* because ‘I’m more interested in the scene, looking around Mirkwood, there’s more to look that’ [Female 41-50]. Thus, the screen clarity and detail may be helping to gain and hold the audience’s attention and in turn immerse them into the detail of the film, detail that many of the interviewees have said, ‘was realistic to the point where it was like looking into another world’. These interviewees’ comments are in line with what Asselin and Gosselin (2013, p.137) describe as exocentric immersion, ‘displays which leave the user outside the represented world’. Despite these interviewees feeling immersed in the world of Middle-earth, they do not feel a part of the world. This is in stark contrast to another segment of interviewees who suggested they perceived themselves to be physically immersed and present within the film. Cinematic presence appears to be a distinct form of immersion in that these interviewees talk about the film as though they themselves are operating *within* the film, thus being present. Two interviewees’ comments highlight such cinematic presence:

The details are so clear it's as if I'm standing next to the characters. Everything is sharp and well defined - no blurring. [Female 22-25]

The higher definition certainly makes it feel more realistic. It pulled me in more and made me feel as though I was watching a live performance, like I was actually there, rather than a member in a cinema audience watching it on a big screen... It felt like I was actually seeing the characters in real life, as though they were standing there in front of me rather than through a camera lens. [Male 26-30]

This interviewee position of presence indicates the potential depth of immersion that such a technology as HFR could bring to cinema. For these particular interviewees, having a clearer image projected on screen evidently makes them feel as though they are physically a part of the film, standing next to the characters or actually being there in the on-screen world. However, when interviewees talk about the differences in their viewing experiences of watching *The Hobbit* in 24 versus 48 fps, a number made comment like the following:

Landscapes or epic interiors, all of those things are, muddy and blurry, lacking the awesome detail that I know the designers put into those film elements, when seen at normal frame rates. However, when seen in HFR, a moving camera shows you every detail, your eye can catch each element of a carefully choreographed fight, and all the detail of a vast interior like Erebor or Thranduil's Halls are sharp and clear. [Female 51-60]

It may be that when these interviewees comment that HFR revealed so much detail as the image was clear while lower frame rates hid much of that detail as the image was 'murky, muddy and blurry' it may be that these respondents feel 'normal frame rates' mar the visual experience because these visual artefacts form a barrier between the on-screen action and the audience member. Thus, as HFR is seen to remove these visual artefacts an increased sense of clarity and detail is perceived as the 'visual barrier' is taken away. In turn, this appears to further the ability to become immersed, because such a clear and detailed image may help to pull the viewer into the screen and allow respondents to be 'closer' with the on-screen world. The immersion that these interviewees remark upon is similar to what Asselin and Gosselin (2013, p.137) describe as 'an egocentric spatial immersion', which they go on to assert is 'not the reproduction of perceived objects, but the reproduction of the experience of perception; it involves not so much the illusion of depth or relief, beyond the surface, as the transportation of the user, outside the frame, into the center of the virtual world'. Such comments by Asselin and Gosselin may ring true in regard to these interviewees because in the same way that these

interviewees noted that such a level of immersion was typically limited to the 3D format, Asselin and Gosselin (2013, p.137) also make the point that 2D ‘traditional images, since they are generally flat and delimited, cannot offer a [spatial immersion] of this sort [because] perceptually the viewer is always left in front of the image, on the side of the surface and frame’.

For some, however, the sense of immersion and presence got to the point of being totally engrossed in the detail, such that some interviewees reported being momentarily displaced from the film and narrative. Such interviewees found themselves so preoccupied with subsidiary details of the film that the focal point of the scene was lost. These interviewees were not strictly distracted in a negative sense, but rather absorbed by the filmic detail. As two interviewees commented:

The only thing I think could hinder the films narrative is that the HFR is so immersive, I found myself in awe at all the fine details in the set and environments. Maybe over time, our eyes will become used to such detailed environments. [Female 41-50]

On occasion I became engrossed in the detail of the image... that I would briefly lose track of the actors. My solution was to buy another ticket and see the film again. [Male 41-50]

It seems that there is no ill sentiment taken toward being distracted from the film as these comments suggest they are becoming distracted from the film and narrative because they are becoming ‘too’ entrenched in the dense visual aesthetic presented. As one interviewee commented, ‘the detail in the film was realistic to the point where it was like looking into another world’. Thus, the on-screen detail may prompt these interviewees to treat the visual imagery in *The Hobbit* as a new medium of sorts: the added detail is something that strikes them as being a welcomed attribute to film but one that, at least for the moment, has the ability to steal the show. Therefore, the increased amount of detail might have ‘came to function as a supplier of the kind of special effect that stereography had provided previously’ (Gurevitch, 2013, p.401), whereby the interviewees were provided with the visual allure of something they may have never before seen on the silver screen.

Furthermore the interviewees' displaced immersion is further illustrated in the above comments as they indicate an eagerness to be fully absorbed by the cinematic world presented. These two interviewees both noted that they were active in their attempts to take in all of the detail, thus there is the sense that there is a conscious effort aligned with their desires of cinematic immersion. This conscious effort may run in tandem with HFR being a 'new' technology for mainstream film audiences, whereby audiences need to adjust to the new visuals of HFR before can be seen as a new cinematic aesthetic. As one interviewee put it:

I wasn't used to seeing that [HFR] but when I saw it again, I kind of knew the story line, I knew what to expect it was much more interesting and easy to follow along and catch all of the details having seen it multiple times in the HFR. It didn't have that newness of trying to keep up with what was going on. [Female 41-50]

Thus, this initial immersive displacement may be arise because HFR technology is presenting a visual world that is a stark contrast to the cinematic world that interviewees and audiences alike have grown up with watching film frame rates well below 48 frames per second, which may have come to shape their cinematic expectations.

Interviewees also noted that *The Hobbit's* improved clarity, visual detail and resulting enhanced sense of realism and immersion might have been brought about due to HFR easing motion blur in the film. As noted earlier, 3D film has been notorious for motion blur and image degradation and of the interviewees who spoke about 3D film and motion blur unsurprisingly signalled a disdain for the effect, where it was seen as 'being a huge problem for 3D film'. As one interviewee pointed out: 'I watch them a lot because there's so many bad ones and I'm curious to find somebody who cracks the code and makes a good 3D film'. Thus, this issue may be one that has existed within the audience for some time.

Furthermore, as previously noted in Chapter 2, there is a lack of research pertaining to HFR and its potential effect on audiences. However, there appears to be a trend in that, of what research there is, HFR is leaned upon as the technology that can amend 'impairments of motion image quality... [and] contribute to the presentation of images with more reality by the immersive effect' (Kuroki, 2012, p.566). These interviewees mirror such assertions about

HFR, whereby the technology was heralded as removing the veil of image degradation. In line with such comments, two interviewees commented that:

3D usually distracts from the narrative at 24fps because fast-moving objects visibly flicker; this is largely absent with HFR. [Male 41-50]

I do think the 48 helps some things, especially to do with 3D and that's the motion blur effect that you get when the cameras are panning or moving fast, something that can be overwhelming in 24 frames per second the strobing effect can be a little bit distracting, not pleasant to look at. So the 48 frames helps that. [Male 26-30]

The discursive thread that these interviewees take is one where HFR is seen to be aiding 3D film where the difference in frame rate and resulting screen clarity form the basis of why *The Hobbit* has improved their cinematic experience. Furthermore, scenes with a large amount of action or scenes that are fast paced were often singled out as particular instances where HFR was seen as being successful. Two interviewees' comments epitomize such a position:

It allowed for a new level of action to be put on screen. With motion blur eliminated, I could see every intricate detail of the action. [Male 31-40]

3D HFR presentation is extremely immersive...the added frame rate adds depth; dynamic range and motion credibility to the image while reducing pan-blur and motion artefacts. [Male 41-50]

These comments highlight how HFR removing motion blur was seen as adding and in some cases enabling the detail and motion of the image to 'escape' the trappings and cumbersome flow of lower frame rate 3D films. In turn, and in a similar fashion to those cited above, these interviewees would go on to say that with such cinematic clarity and detail the film lends itself to greater impressions of realism and feelings of immersion, because the visual improvement was seen as creating an image that is closer to that of real life. As one interviewee noted, HFR succeeded in creating a more realistic world because 'there's no motion blur in real life!' [Female 22-25]

Interviewees also noted the ways in which HFR improved panning shots. Many of the interviewees would complain that in low frame rate films the panning of the camera is at the mercy of the frame rate in that the camera cannot move at high speed because of the visual flicker and image degradation that occurs. One interviewee commented that:

In low frame rate films you can't move the camera as fast, so the actual panning of the camera tends to slow down a bit in things like action shots, you can't just turn around and see something. [Male 18-21]

However with HFR, such shots were improved because the increased amount of frames on screen allowed the camera to pan across landscapes with greater proficiency and move through high level action scenes without sacrificing image quality:

HFR in *the Hobbit* works really well in bringing the fight scenes into focus and making all the action clearer. [Male 18-21]

I have not been a fan of 3D, but the extra clarity of the HFR made it much more watchable and enjoyable for me. The elimination of motion blur and ability to focus well during action scenes was a huge plus as I was able to follow what was going on so much better. [Female 31-40]

Interviewees would similarly remark that the improved imagery in *The Hobbit* promoted a greater sense of realism, immersion and presence because HFR was perceived to enhance the movement and flow of the overall film and characters on screen. Again, interviewees seemed to be well versed in commenting on the differences between 24 and 48 FPS and the affect that each respective frame rate had on their viewing experience, along with the perceived difference between the filmic paces in *The Hobbit* compared to other 2D or 3D films they have seen. From a broad film perspective, some of the interviewees indicated that the pace of *The Hobbit* complemented the construction of the narrative. On one hand, this might be because the film is based on a fantasy children's novel and *The Hobbit* in HFR may be seen to reflect this, as it was noted that 'in the high frame rate version it just felt a little more lively', and that *The Hobbit* was a 'softer' and more 'dream like' film as compared to films such as the *Lord of the Rings* trilogy. Although, on the other hand, there was a greater sense that interviewees engaged with the movement and flow of *The Hobbit* to that of real life

possibly because, as Douglas Trumbull asserts, ‘at higher frame rates you tend to approach reality in the sense that the real world is not a series of still photographs but instead has this fluid smoothness’ (as cited in Gilchrist, 2012, p.38). In line with Trumbull, one interviewee expresses a view that was shared by several interviewees:

It felt more like you were a part of the film with *Desolation of Smaug* rather than a spectator, which I felt like in an *Unexpected Journey*. It’s like I’m keeping up with everyone. As a spectator in anything, like a stage play, they would usually slow down their actions and exaggerate just so the audience can keep up. In HFR 3D it's like you're actually there moving naturally and organically as everybody else so it's like you're a part of it... the motion is realistic to me because with HFR you're moving just as fast as they are. [Female 18-21]

Here, the interviewee appears to be alluding that the pace of *The Hobbit* promoted a greater sense of realism because it was natural and possibly seen to mirror the pace of real life. This interviewee went on to comment that:

In Narnia the motion isn't as quick for me. *The Hobbit* seemed more realistic, in parts where you're getting swept of somewhere in Narnia it's still kind of like you're watching it in the cinema whereas in *the Hobbit* if something zips by it really zips by... in HFR it gets me asking some questions, what's happening to my left or right because I can't see everything going on right away. [Female 18-21]

The action on screen appearing to move naturally and organically but in a way that pushes the audience to think about and engage with the action that zips by may play a part in changing the viewing orientation from being a passive viewer to an active immersed viewer, because the pace of the scene fits the real world expectation for such movement. This is further highlighted by the following comment:

The barrel sequence felt like it was at video game speed but with that said it felt like it fit the mood because it was this high paced action sequence, so I bought it...with the higher frame rate version. [Male 18-21]

Background depth was another aspect that HFR was pointed to as improving. Interviewees felt that HFR added dimension to *The Hobbit* in a way that appears to be different to that of 3D. One interviewee commented that:

I noticed that the filming was different, everything seemed more right there, more like a TV show where everything has a lot more dimension to it, it just felt like the characters stood on their own...in the opening scene, everything just seemed to stand out, there were more levels that I noticed with the higher frame rate. In the fellowship when we were last in Brie, everything was all in one panoramic view but in *Desolation of Smaug* when you're in Brie everything just seemed a lot more real, like not just a movie...it was definitely something I've never seen before. [Female 22-25]

While a number of the interviewees were very clear in emphasising this point, it was not a recurrent response made by all of the interviewees.

## 5.2 3D: Realism, Immersion and Presence

The majority of these interviewees reported having a high viewership of 3D films and the interviewees were all well versed in critiquing 3D film, and it would appear they have a keen eye for picking up on the 3D visual effects in a film that they would rather have been omitted. For many of these interviewees, in order to critique *The Hobbit's* 3D many would reflect upon, compare and contrast it with their previous 3D film viewing experiences. Possibly because they have built a foundational understanding of what constitutes a negative 3D film experience, interviewees could then situate *The Hobbit* amongst these experiences and identify any prevailing difference initially based on what the 3D effects in *The Hobbit* did not do.

Much of the academic literature that surrounds the history of 3D film typically raises the point that ‘to account for the failure of these initial efforts to establish S3D, several factors have been cited...but the overuse of the emergence effects was likely a decisive factor’ (Asselin and Gosselin, 2013, p.134). Such a position is also apparent with some of the interviewees, where the overuse of emergent effects forms the basis critiquing 3D film. When asking the interviewees in general terms about *The Hobbit's* 3D effects, they would start by outlining the derision they continue to hold over the use of obtrusive negative parallax in 3D films they have previously seen. As two interviewees expressed:

I’m a harsh critic of 3D...mostly because I have seen it and continue to see it mostly as a detraction from the film...the 3D is not usually done well or they throw in a lot of gratuitous 3D. [Male 41-50]

There’s this drive in the film industry, and I saw it a little bit in *The Hobbit*, where if you’ve got this awesome technology you tend to want to use it...if you’re shooting ‘this’ out at the audience you’re not telling a story you’re showing off your technology, I don’t want to see that. [Male 18-21]

Thus, there is the distinct feeling that 3D and its effects are haunted by its own past. Even for interviewees of very different ages, who may have been exposed to vastly different iterations of cinematic 3D, these negative experiences derived from previous experiences with 3D film have created an ominous expectation for any later iteration. As such, it appears as though 3D

film has become well known as ‘a special effect mostly concentrated on thrusting big, round or pointy things at the audience’ (Elsaesser, 2013, p.220). The recurring discursive elements that Elsaesser and other academics draw on when commenting on emergent effects is not limited to the academic sphere. Such language is mirrored within the comments of the interviewees:

3D was constantly popping out at you and jabbing you in the eyes, it’s kind of gimmicky...I remember the first 3D film I saw was *Beowulf* and that one had a lot more of those kinds of shots, a spear would come right out in your face and that kind of threw you out of the movie. It was like ...wait a minute...it distracted more than it added to the overall product. [Female 22-25]

Thus, the issues that these interviewees take with emergent effects may not be ones that are born from one particular time period. As Johnston (2012, p.250) asserts, ‘every attempt to revive 3D since 1955 has returned to these debates, to ideas around why the technology failed, what it was unable to do’, which may be why the discourse of 3D film being seen as novelty cinema where it became ‘inconsequent to mention the word ‘story’ (Johnston, 2012, p.252) with 3D film. Interviewees would also remark that there are other modern day 3D films where blatant emergent effects are still prevalent and have an unnecessary presence. Such comments are in line with Atkinson (2011, p.149), who remarks that ‘gratuity and gimmickry has... persisted into this new era of S3D. Films such as *My Bloody Valentine 3D* (Lussier 2009), *Piranha 3D* (Aja 2010) and *Saw 3D* (Greutert 2010) are all examples of big budget blockbusters that have centralized and accentuated the ‘spectacular’ aspects of the form’. Despite interviewees outlining the negative sentiment they hold toward emergent effects such effects do not appear to deter them from viewing 3D films:

I can forgive 3D if I’m going to go in and I have to watch an action movie and I know it’s going to be overproduced and everything then it’s fine, I can sit down and watch a film and I can totally enjoy it. [Female 31-40]

Rather, it is clear that along with any persisting apprehension that a history of unfavourable experience may have built up, there is also a feeling of excitement and willingness from these interviewees to accept the format:

If it's a 3D film I always go see it in a big cinema, on as big a screen as I can because I want to see if it's a good 3D film. I'm super excited to finally see a 3D film where it makes total sense. I'm always searching, like is this one going to be a good 3D film? But I rarely have seen one where I'm like 'wow'. [Female 31-40]

You won't see me paying the extra money to see a 3D film of something else, I'll take 2D over 3D, I guess I was trusting Peter Jackson that he didn't overkill CGI in the first trilogy, and that was the up and coming ground-breaking technology at the time, so I was really hoping that he wasn't going to use 3D as jumping on the bandwagon because everybody else was doing it. [Female 22-25]

However, Atkinson (2011, p.149) remarks, albeit before the release of *The Hobbit*, that 'we are starting to see a rethinking and reconfiguration of the filmic form in a number of notable commercial releases; arguably the exemplar of this new movement is *Avatar* (Cameron 2009)'. It is interesting that Atkinson singles out *Avatar*, because the majority of the interviewees, who were so clear in outlining the disdain they held for 3D and overt emergent effects, were quick to positively comment on what *Avatar* achieved as a 3D film. Atkinson asserts that *Avatar* is the exemplar of a new movement and reconfiguration of 3D film because it, and other films of the like,

Rely heavily on the visual aspects as the main mechanism by which to convey the story, and the characters' emotions and relationships. The shots contain much more foreground and background detail in which we are immersed in the beauty and detail of their construction and their rich visual imagery. They also tend to be held on-screen for longer periods of time, encouraging a prolonged indulgence with the image.  
(p.150)

The points raised by Atkinson are reflected in interviewees' comments concerning *Avatar*, whereby it is typically purported that:

It makes total sense to make *Avatar* in 3D because it is another world and it's a fantasy world...the camera was still. The camera was not moving constantly, there were sequences in the film where there's a lot of action, there's a lot of tempo and there moving around a lot but it was not constant, there were only two or three times

where you swirling around the landscape and there were other times where it still had these images where you could enjoy the composition of the 3D for longer moments...you're walking through the garden and you... had all these flowers and... these tiny things in front and then in the back, it's just more like thought of...it wasn't a constructed 3D shot...so you could really dwell on the 3D, you got the chance to be transported. [Female 31-40]

The 3D enhanced the experience greatly. As long as 3D are tools that directors/movie studios use to enhance the product as opposed to just selling more expensive tickets and incorporating standard 3D shots like things exploding I'm all for it. *Avatar*, *How to Train a Dragon* and *The Desolation of Smaug* are great examples of when the technologies are used properly. Unfortunately, for every good movie there are at least half a dozen movies that do not have a great use of 3D. [Male 31-40]

Thus, for *Avatar* the points that made it a positive 3D film experience were it abstaining from the gimmicky uses of overt emergence effects and with that the 3D effect having a greater emphasis on affective feelings of cinematic depth within a subtle scene. Furthermore, these interviewees are pointing to similar 3D effects that Atkinson (2009) purported as signalling a reconfiguration of 3D film effects.

Discussion pertaining to *Avatar* and what it achieved as a 3D film is important as *Avatar*, the highest grossing 3D film at the box office to date, stood as interviewees' filmic comparison of 3D quality. What makes comparison important is that their point of reference is with a 3D film made and distributed some six years ago and that the positive attributes of *The Hobbit's* 3D, which I will discuss in greater detail below, are similar to that of *Avatar*, a 3D film made without the technologies available that *The Hobbit* had. This may also help in defining visual tropes of 3D film that are clearly resonating with these interviewees and allow the 3D format escape from its own shadow as a brief aside in cinematic history.

As described above, the interviewees' critique of previous 3D film they have seen is a prevalent part in how they praise *The Hobbit's* 3D effects as this was done by conveying what the effects in *The Hobbit* did not do.

As one can imagine, a key difference that interviewees noted was the absence of obtrusive emergence effects in *The Hobbit*:

I thought *The Hobbit* did a good job on avoiding this...I think they're doing a great job of avoiding going back to the old shoot the stuff out at the audience. [Male 18-21]

I don't like the whole axe flying out at me...I didn't get the sense that that was happening in *The Hobbit* so much, it wasn't that intense, even through the goblin cave there's things flying everywhere but I still didn't feel like I needed to duck, whereas in other films it's [emergent effect] is overdone. [Female 31-40]

These interviewees further highlight the derision they hold for emergent effects, but in doing so they also allude to Atkinson's notions of a reconfiguration within 3D film having occurred. The above comments are in line with what Atkinson asserts, because the interviewees' comments about emergent effects are phrased in a way that is reminiscent of the negative discourse that has been seen to consume the format since the 1950's. As Johnston (2012, p.251) contends, 'language began to describe the films as an attack on the viewer: a bombardment of everything from molten lead to baseballs; spears fly at you...this more intrusive aspect of the 3D aesthetic became a cause celebre...to brand the technology as a retrograde step in cinema's development'. Thus, it may be that when these interviewees, and other commentators, take the time to specifically note what *The Hobbit's* 3D did a good job in *not* doing, it implies a perceived sense of progression in the format.

Furthermore, while *The Hobbit* strayed from the seemingly normative emergent conventions of 3D films this was seen to complement *The Hobbit's* increased use of positive parallax, an effect that emphasizes feelings of depth within the film:

It seemed to be 3D in depth rather than 3D in the sense of objects flying at your face - the latter one seems more and more to become something of the past. In my opinion, most films now establish that 'in-depth' feel. [Female 22-25]

It is this 'in-depth feel' effect that appears to have the greatest affect for these interviewees; moreover it is one that seems to make for a more realistic and immersive cinematic experience as compared to 2D. The ways that interviewees would remark about the two

formats is interesting, because they would comment about what the 3D format made them feel, this typically being greater sensations of space and depth over 2D. As two interviewees commented:

It's just more natural...you're seeing things like you actually see them...when you get that depth [of 3D] it allows you to see a little more, you see how big everything is, whereas you may think it's smaller otherwise [when watching in 2D]. [Male 18-21]

2D was flat, even with knowing the book so well and feeling for the characters you still didn't get that same connection happening. With the 3D version you got that emotional connection, you felt what they were feeling... [because]...you get more immersed seeing more out of the characters' faces, you're getting that expression a lot more in-depth, not just a flat face. [Female 31-40]

Furthermore, these 'in-depth' scenes would typically be commented about in conjunction with scenes characterized as having a distinct absence of action. Typically, high action scenes were not purported as being overtly negative, just not being optimal for the 3D effect to be fully absorbed:

When it was very fast, for example in a battle field or something it was too fast for me, it thought it was because there's always something going on in the foreground to make it more 3D than it might be, then it was blurry, then when it became calmer, slower then it became easier and for me more believable than that fast pace. [Female-41-50]

However, with regard to these subtle 3D scenes, which incidentally in many cases were location shots, these types of scenes were particular instances where the 3D effect resonated with these interviewees. Furthermore, with these calm scenes that established a sense of depth, many of the interviewees would, in a seemingly contradictory manner, remark that emergent effects were prevalent. However, the 3D effect was noted as being subtle, which was a prominent and recurring point made by interviewees seen to improve their 3D film viewing experience, and to in many cases improve feelings or cinematic realism and immersion.

Too many use 3D to "wow" the viewer but it tends to draw them out of the story ...but some manage to work it in more subtlety ...without it standing out.

[Female 31-40]

All characters are admiring the scenery, and you also are, and suddenly you've noticed a butterfly or something in 3D and start watching it, as is often the case in the real life.

[Female 26-30]

This particular scenic shot with the emergent butterflies was one that interviewees would typically reference. It may be that this particular scene resonated with interviewees because the depth of the scene may be further complemented by the emergence of the butterflies as the perceptual distance between the protruding insect and the end of the location shot is larger. It might be that there is a greater operational harmony of the 3D effects in these subtle scenes, whereby negative and positive parallax work together to re-create the perceptual feeling that a similar context in the real world would provide an individual:

It really reached out to me...made me a part of that world like I could reach out and touch those butterflies like I could be there where Bilbo was, it was great just those couple of seconds that I had that 3D [experience]... it was mainly with that scene where it stood out. [Female 18-21]

Interviewees also felt that prominent emergence effects were still prevalent in *The Hobbit*; however, they were implemented in a way that complemented the film. Such a position appears to contradict previous statements these interviewees made concerning their disdain for emergent effects and feeling that *The Hobbit's* 3D was more focused on image depth. However, interviewees comment in a way that emphasizes that prominent emergent effects in *The Hobbit*, along with some more recent 3D films, were implemented in a different way than audiences have come to know. Emergent effects were not seen to be blatant, being done sparingly and more importantly at moments that befit the scene and create an affective sense of volume. One interviewee's comment highlights this idea:

I got the impression that *The Hobbit* is more well weighed than other 3D films ... you are involved in fights on the screen and are holding your breath to see all actions; and – look out! - a dreadful orc's head has just flown past your head... the right moments

were chosen for perceptible 3D-object...they are not inserted clumsily. [Female 26-30]

Thus, it appears that for these interviewees at least, there is a feeling that the conventions of 3D filming have been altered. One interviewee, who said that ‘the users of the 3D technologies in *The Hobbit* have a more technical and creative understanding of these tools and utilize them in such a way as to enhance the movie watching experience’, in fact mentioned this. In line with this, the vast majority of the interviewees felt that in any scene with Smaug, 3D effects were of great benefit to the scene typically because 3D ‘impressed upon me the scale of Smaug’ [Male 18-21]. Interviewees would go on to comment along the lines that

It looked like his head was crossing the mid-ground and fore-ground and it came out to the audience, it was this nice transition, it didn’t feel like this paper book cut out it felt like it was this actual 3D object where if I turned my head to the side a little bit I could see the side of his face. [Male 18-21]

In a similar fashion to the way some interviewees perceived the subtle 3D scenes as complementing the context of narrative, here with Smaug, it appears that interviewees make a similar point. It may be that because Smaug has been the ‘object of so much speculation and anticipation within the fictional film world and beyond’ (Taylor as cited in Falconer, 2013, p.212), having the ability to project a 3D version of Smaug into the cinema in a way that he appears to visually encompass the audiences’ personal space highlights ‘all the majesty and horror that Tolkien’s text conjures’ (Falconer, 2013, p.212) about this immense villain. Hence, despite Smaug emerging from the screen, it is accepted possibly because the effect creates an affective feeling of volume that accompanies Smaug, thus fitting with what the narrative itself is trying to convey about Smaug, along with the expectations that Tolkien and Jackson fans may hold for him. As one respondent remarked,

Smaug was the biggest highlight of this film for me. Being a favourite book of mine for so long ...I was most looking forward to seeing Smaug come to life... The intricacies of his facial expressions and how life-like he looked were simply mind blowing, a rare ‘I can’t tear my eyes away from the screen’ moment. [Female 26-30]

Such ideas these interviewees hold about constructive use of 3D are further reflected in the way one interviewee commented on the affective contrast that arises when comparing his viewing experience of watching *How To Train Your Dragon 2* in 2D versus 3D:

The main character is standing facing away from screen and you see this golden fire, it suited the film because you saw the distance between where the source of the glow is from and the main character, you saw the distance...the spacing between the two helped set the mood, you got a better understanding of the distance in 3D than in 2D. [Male 18-21]

The attitude expressed here toward the 3D effect in *How To Train Your Dragon 2* is similar to what these interviewees are alluding to in their comments about *The Hobbit's* 3D, where the affect of a 3D effect is a success so long as it aids the narrative. Two interviewees commented that:

[3D] helped making the audience a part of the story...it didn't tell the story...the 3D would help in telling the story. [Female 22-25]

It really makes sense the way they used the cameras and the 3D when he goes and meets the dragon; it's a big beast and you need to see it in 3D. [Male 18-21]

Thus it may be that, these interviewees feel *The Hobbit's* 3D effects were used in scenes where it makes sense and is relevant to the context in which the effect operates. As a result of that, the 3D effect further exemplifies feelings associated with real world sensations of depth and volume, which incidentally may shed light on why emergent effects from the past have been labelled as gimmicky - possibly because these effects had a weak association with the narrative. However, the subtle butterfly moving from the expansive landscape shot into the audience goes beyond showing the vastness of landscape as it generates a feeling of space, in the same way that Smaug protruding into the audiences creates a feeling of the size and volume Smaug has. Such effects of 3D can be seen to transport an audience member from outside of the confines of the cinema screen and into the middle of the virtual world presented (Asselin and Gosselin, 2013). It may be that there is not a particular type of 3D use, be it overt or covert, that the interviewees were more accepting of, but rather 3D effects that

are better suited to fit the context of the scene and help portray the mood of that scene, all the while helping to tell the existing narrative:

I feel the story is essentially the same, I don't see how 3D would alter the story, 3D just alters the way you perceive the visuals presented to you... [3D is] meant to augment the story like a sound track, enhance the emotion, for example, they adjust depth so the world looks very large and you have this very small Bilbo put in that setting or scene, so you have a sense of - this is scary everything around you is very much bigger. It's kind of an emotional thing, an emotional manipulator if you will. [Female-22-25]

There's things like arrows being shot out of the screen, there were scenes where I expected to see the stuff popping out a little more. Right when Bilbo first encounters one of the spiders, when that spider comes out and there was his fangs that kind of come out... it's a little more subtle... it's not nearly as pronounced as the 3D with the bee... which I really liked actually it was like for a second, it cuts from the bees to running horses... as long as it's not overly used then it's kind of stunning, in that one moment but not every moment. [Female-22-25]

It appears that, for these interviewees, 3D may add another layer of visual information from which they can garner a greater understanding of the film and its narrative, possibly because they become privy to what is happening between the layers of a scene, so to speak. It may be that with 3D, viewers are presented with a realistic illusion of space that is a reflection of a real world environment.

This may then help viewers to situate themselves within the narrative to a greater extent because there is a sense of realistic emotion tied to the visual world projected on screen. An attribute that may help facilitate such a filmic affect may lie in the larger amount of screen time that these scenes are perceived to be given, along with the increased subtlety of the 3D effect within the scene. Thus, it may be that particular scenes in *The Hobbit* make for better 3D not because they are subtle landscape scenes or volumising scenes of Smaug, but because the technological 3D effect creates an affective sensation that mimics a real world feeling that accompanies the narrative context being shown on screen. Thus, for these two particular scenes we have discussed, the 3D effect may be proclaimed as successful because it generates

a palpable effect of haptic volume and space, all of which acts as a story aid to create a perceptually more realistic and immersive world.

### 5.3 HFR: Negative Perceptions of Realism, Immersion and Presence

‘Jackson...he’s lost his way’ [Male 18-21]. The praise that many of the interviewees held for the HFR technology showcased in *The Hobbit* yields a stark contrast to those who feel HFR hindered their perceptions of realism and immersion. HFR was a technology that many of the interviewees took issue with for many different reasons, however the discursive foundation that these interviewees remarks revolve around the aesthetic differences that HFR projects on screen as compared to their expectations that the *Lord of the Rings* trilogy established.

Davis, Michelle, Hardy and Hight (2014, p. 50) state that ‘audiences for blockbuster event-film sequels and adaptations often formulate highly developed expectations, motivations, understandings and opinions well before the films are released’. This appears to stand true for a number of the interviewees involved in this project. A number of the interviewees were initially ambivalent toward the aesthetic HFR created, typically remarking that ‘*The Hobbit* is my first high frame rate film and at first it took me off guard a little bit. It felt like something wasn’t right but then I got used to it’ [Male 18-21]. Others, however, were not as susceptible to the visual change. It may be that older generations of movie-goers take more of an issue with HFR, as one interviewee commented: ‘if you are used to watching film in a certain way for 45 years then when it's different your brain says 'this is fake' ’ [Female 41-50]. However even younger interviewees took issue with the aesthetic differences that HFR created: ‘I really wish they would have stuck with the traditional viewing canvas [with] which people are used to seeing Middle-earth’ [Male 18-21]. Some of the interviewees were optimistic in their thoughts toward HFR, taking the stance that with time their opinion toward the technology may change; however others were more forthright in their disdain for HFR.

It was also evident that one of the main issues some of these interviewees have with HFR seemingly comes from an emotional base. Many of these interviewees were excited about *The Hobbit’s* release to the point that many followed the film’s production through various media. These interviewees would typically remark that ‘I was quite excited about coming out and I was following all the production videos on YouTube with Peter Jackson and everything’ [Female 31-40]. It would appear that many of these interviewees’ excitement derived from an expectation that *The Hobbit* stood as a cinematic return to the *Lord of the Rings* world they hold so dear. As such, many found that HFR hindered such a return because

the veneer of HFR was seen to create a visually different aesthetic to the *Lord of the Rings* trilogy:

I have this mental paradigm that film should look a certain way and have certain features and characteristics, and if it deviates such as HFR or 3D that causes me to say well there's a difference here...I didn't care for HFR, I don't know if it was excessive realism...it definitely has a different quality to the images and I found that to be a little distracting from what I was used to. I had a preconceived notion going in, were going to have something in line with the Lord of the Rings trilogy and then it's something completely different. [Male 41-50]

The biggest difference was the 48 frames, between 2D and 3D 24 frames per second it's different but not as a big of a jump from 24 to 48...HFR was hugely negative for me, since I'm familiar with video and all that I thought I would know what to expect and I was very on board and excited...and the first time I saw it, it was overwhelming because I've been waiting so long for these movies, seeing it for the first time was an overwhelming experience and then to see it look so bizarre and so different and weird it really bothered me...I hated it, I mean I really hated it. [Male 26-30]

It appears as though these visual differences from traditional film or the *Lord of the Rings* trilogy formed the basis of these interviewees' ill sentiment toward HFR. As a result, these interviewees found it difficult to immerse themselves into the on screen world because their expectations and what they are confronted with are two contrasting aesthetics:

I just desperately wanted to return to that world and feel like part of the Lord of the Rings saga...part of me wishes they made them like the rest of the trilogy and just focused on that instead of this new format [Male 26-30]

When these interviewees comment that they feel as though the world HFR presented is 'bizarre' it seems as though *The Hobbit* in HFR was a distinct contrast from what they were expecting due to the established Middle-earth aesthetic that 24 fps had established with the *Lord of the Rings* trilogy.

If I can choose, I will always opt to watch *the Hobbit* movies in 2D. It feels much more realistic to me when it's gritty and not so bright, like in Lord of the Rings [Female 22-25]

2D feels more like it should, tangible as a way to escape into another world and I think that's because it's what were used to. It feels more like I'm looking through a window into another world. By looking into the screen we're not trying to become a part of this world literally we're just trying to escape into through this window [Male 26-30]

Thus, the words 'gritty' and 'tangible' are ones that these interviewees feel aptly describe what is lost from their HFR viewing of *The Hobbit*. However many of the comments that these interviewees make about the tangibility that they see HFR takes away from *The Hobbit* are also echoed in their thoughts toward HFR interaction with the CGI.

In a similar vein to those interviewees who felt that HFR created a much clearer and more detailed image, these interviewees are inclined to take the same stance. However, here, such clarity and detail is seen to be a negative attribute of HFR. However, as Kim and Oh (2014, p.37) state, 'HFR, by its very nature, comes with almost no flicker, motion blur and stuttering', and this is an attribute of HFR that these two sections of interviewees both link with this technology:

I do think HFR helps some things, especially to do with 3D and that's the motion blur effect you get when the camera's panning or moving fast, sometimes that can be overwhelming in 24 frames per second; that can be a little distracting. There are aspects of HFR that work but overall it was a failure [Male 22-26]

Furthermore, for some interviewees the failings of HFR also lie in the technology's disjointed use with CGI. Bearing in mind that some of these interviewees felt that the majority of the CGI in *The Hobbit* was done to the high industry standards interviewees did not take issue with the *entirety* of the CGI in *The Hobbit*; rather, the instances where the CGI did not blend into the film was of great concern:

Eighty percent of the CGI is well done, there was a lot of it but the environments and Mirkwood halls looked good, the whole sequence with Smaug looked good, I do think the digital doubles have come a long way since Lord of the Rings...I am picking up on everything that's wrong with it elsewhere but Desolation of Smaug probably has the best CGI that we've seen in it [Jackson's cinematic Middle-earth] [Male-26-30]

The CGI was well done to the highest industry standards, there's no doubt about it, it was well done it's just that the difference between CGI and humans is prosthetics for some of the scenes, there's still a noticeable difference [Male 41-50]

In the first instance, interviewees felt that because *The Hobbit* was filmed in HFR, the tangible real world elements, such as location shots, backgrounds and physical sets were clear and detailed when projected on screen. This on its own was of no concern, many of these interviewees praised just how beautiful these location and real world shots of New Zealand were. Such comments are in line with a sect of interviewees previously covered. However, the issue these interviewees held with the HFR and CGI lies in the CGI not being able to integrate into these location scenes, or any scenes that yielded any tangible elements, which includes actors and any prevalent prosthetics, because the disjunction between the CGI and its HFR filmed backdrop were incongruent to seen to be incongruent to one another. As two interviewees stated:

When they shot just in 3D HFR...when they have 100% New Zealand it looks pristine, it looks gorgeous in fact it's a great format for a documentary anything that has real tangible elements. But when it comes to Middle-earth, it's a little jarring at first because we're are not used to seeing Middle-earth rendered in such clarity but when we get into shots with trolls or fake sets blending with Middle-earth...you can see it's a fake digital backdrop...and for things like that I know this isn't Middle-earth I know and love from *Lord of the Rings*. [Male 18-21]

On the one hand, the depth makes backgrounds more realistic. On the other hand, characters or objects sometimes feel 'pasted' into it - even if it's not green screen and a real set they are on. While my experience is sometimes enhanced, that 'pasted' feeling can sometimes disrupt my immersion. This barely happens with the 2D version,

which seems grittier as well somehow. This makes the 2D version more enjoyable for me. [Female 22-25]

As Klassen (2012, p. 83) states, ‘special effects are supposed to remove the element of indexicality’, but because HFR presents a natural and realistic world that interviewees are able to more readily identify with when CGI moves into that world it stands a secondary filmic element that is ‘pasted’ into the scene. Thus, possibly rendering the CGI as unrealistic because the CGI and its filmic backdrop do not meld together seamlessly. It may not be that HFR draws attention to the fact that the CGI is CGI, but rather that HFR creates a visual world that current CGI is unable to compete with, thus making the CGI seem like a ‘video game’ or ‘cartoonish’, as many interviewees would state. In turn, it may be that this visual disjunction prompted interviewees to question the CGI, and in doing so it then becomes overtly visible and negates perceptions of realism, thus subverting immersion.

In the same way that the interviewees found that 24 frames per second created a visual perception of grittiness in the *Lord of the Rings* and *The Hobbit*, such image attributes were also seen as helping the CGI to blend into *The Hobbit*. It was purported that CGI can merge into a 24 fps film with greater ease because having less frames projected on screen means the CGI and any discrepancies can be hidden by a veil of sorts, in that it projects an image with less clarity as compared to 48 frames per second:

CGI was the best in the 2D showing, they looked the best - the most realistic - because the HFR, I don’t know quite what but it does make it look a little fake. It doesn’t mean it ruins the movie or makes it any less but there’s definitely something to be said about the traditional format making it look a little more real. HFR still needs to advance a little more but it doesn’t mean we need to throw it out. [Female 22-25]

Some interviewees would note that darker surroundings in *The Hobbit* helped the CGI to fit more seamlessly with the film, while this idea was not largely prevalent across the interviewees it helps to further showcase the idea that situating CGI in a darker and grittier, similar to that of 24 fps, setting helped the CGI blend into the film more seamlessly.

All the backgrounds and settings seemed very real to me, it was much easier to spot digital characters, like Bolg... The larger characters in this film - Beorn, the spiders and Smaug, mainly - seemed much more realistic. Of course, this could also be because of their drastically different surroundings: darker, with lots of foliage, architecture, mist, smoke and/or flames to cover up and draw your eyes to. [Female 22-25]

According to Falconer (2013, p.147) ‘the filmmakers employed both physical and digital technologies to make the orcs as malevolent as possible and threatening as possible, using computer generated creature effects to push the designs of what could have been possible to achieve using practical make-up effects alone, but careful not to stray too far away from what had been established in the *Lord of the Rings*. However, while this may have been the goal of the CGI, it would appear as though these efforts were done in vain. The concerns about the realism of CGI characters sparked comments to arise regarding the lack of characters in prosthetics in *The Hobbit* as compared to the *Lord of the Rings* trilogies. The issue arose because in the same way that CGI was seen to be incongruent with the real world shots, CGI was seen to create visual disharmony when used alongside characters in prosthetics. This, in turn, would result in the interviewees noting that prosthetics made for a more realistic character because there was a feeling of tangibility and humanity to them. This point was typically made through comparing and contrasting the use of CGI in *The Hobbit* as compared to characters in prosthetics in the *Lord of the Rings*:

It’s the CGI, the excessive use of CGI; I wish they were played by human beings, they would have been a heck of a lot scarier, a lot more tangible, there would be a greater sense of danger and they’d be more formidable foes...the dwarves aren’t even formidable foes because they’re CGI and just go down with one blow that wouldn’t have been the case back in the day you would have had a fight between two human beings, two actors, humans in prosthetics moving around for real, it was gritty and believable, now it’s the opposite. [Male 18-21]

In *Lord of the Rings* they had really realistic combat where you feel like okay this guy could die because he’s not superman and they were like very mortal it seemed...The barrel scene...when Legolas is like jumping around and stuff like that I felt like that

was really like ‘okay that CGI is so crap the whole Legolas is CGI right now. [Male 18-21]

Furthermore, a small number of the interviewees did note that the barrel scene appeared to be shot on a ‘GoPro’ camera; this proved to be problematic for their viewing experience in that it broke their filmic immersion. Typically, these interviewees felt that the change in camera was notable as it presented a visual aesthetic that was different from previous experiences with Middle-earth. Such a position is similar to that above; however, these two interviewees further illustrate the nuance of the position:

GoPro-like shots mixed in with them that are very out of character for all the Middle-earth films...the change of technique popped me right out of my immersion again because I wasn't expecting it. [Female 22-25].

The GoPro shots in the barrel scene are unforgivable, almost to the point that, I would never do this, but edit those out myself because they are just ridiculous. It takes you completely out of the cinematic world they have created through this lens and all of a sudden to take you out of it... it compromises the integrity of the world to me. [Male 22-26]

Again, there is the distinct sense that these deviations from the aesthetic that the *Lord of the Rings* had established lead interviewees to engage with *The Hobbit* as being less realistic. Bearing in mind that these interviewees were for the most part very literate and passionate about Middle-earth and that many of these interviewees reported being extremely excited about the prospect of returning to Middle-earth. Thus, it may be that any deviations from their prior expectations then have the potential to be seen as unrealistic, not necessarily because the effect itself is visually unrealistic, but because it is different from pre-existing notions of what constitutes a realistic Middle-earth. In turn, such feelings may be what cause breaks in immersion, because these viewers then become very aware of these visual discrepancies.

This is a prevalent point raised by these interviewees; the sense that the physical movement of the CGI characters did not have the integrity that a human in prosthetics would have. Legolas in the ‘barrel scene’ was a recurrent example of this; the way he was made to jump in

leaps and bounds down the river because ‘Legolas has to have another funny heroic moment so he’s jumping from head to head, and then from a cliff side over to the other - it's like, ‘all right you’re doing this for the camera’ [Female 26-30].

These actions were remarked upon as being ‘cartoonish’ and not ‘natural’. A few of the interviewees did make the point that the CGI in the barrel sequence was cartoonish and unnatural as a result of HFR increasing the speed of the characters’ movement, and that it gave the CGI a ‘smooth’ and ‘plastic’ appearance. This point was prevalent in the questionnaire responses, but not to the same extent with the interviewees. Many of the interviewees remarked that the barrel scene lacked realism because of the excessive use of CGI in the scene and because the movements of these characters were too outlandish even for a fantasy world:

Bomber bouncing around like an animated cartoon, I’m not even taking that seriously. It’s fake as hell. [Male 18-21]

Barrel scene, having CGI elves and orcs made it feel video-gamey and kind of ruined the scene. It hindered the sense of danger, that's probably more to do with the direction of that scene than the CGI because in any way that scene was ridiculous [Male 18-21]

Consequently, many commented that such actions took them right out of the film, breaking their immersion because these ‘cartoonish’ movements broke a sense of continuity with the tone of the film and, for some, what the *Lord of the Rings* had established. There is the feeling that it may be this break in continuity that forms the basis of why the scene was pointed to as being negating feelings of realism and immersion. In many cases the interviewees would reveal that they were in fact slightly ambivalent toward the scene as after critiquing the scene for being ‘CGI infested’, it would be praised as an overall good scene that was ‘really well done’. Many interviewees felt they could ultimately ‘forgive’ the scene as it was a light-hearted and could be disregarded as a legitimate part of the Middle-earth world.

I could watch these dwarves go down the river for that entire amount of time but it’s just all of the things they added to it, I don’t think you saw Bilbo at all in the scene, it

was just about shooting arrows...I mean when will this scene end? I don't think it advanced the story and that's a quote I've coined of Peter Jackson, he's all about advancing the story and that scene did not advance the story. [Female 22-25]

With Legolas it was just wacky like comic book sort of stuff so I just kind of let that scene go like ok this is the wacky funny part, I don't need to take this seriously so I just kind of let it happen, it was a funny scene. [Male 18-21]

These issues that the CGI was seen to face were prevalent across the film in its entirety, but the barrel scene stands as the most recurrent example that interviewees would point to. Moreover, it may be that within a broader context of research interviewees who don't have such an affinity to the Middle-earth world of Tolkien or Jackson, the scene might not have been identified as a negative one but rather as a good-humoured scene, which is what the scene was definitively seen to be.

This perceived idea of realism appears to be tied in with perceptions of realism, as Moszkowicz (2012, p.314) remarks,

Whilst it cannot be contested that the computer has, indeed, provided us with some useful tools with which to visualize the world and make its image incredibly realistic, the outcome is not informed solely by the machine nor by its capacity to mimic the physical aspects of human perception. The realism on offer is more crucially informed by prior engagements, on the part of animators and audiences alike, with existing media.

Thus, it may be that the context of realism is in fact derived from existing media. As we have seen, the *Lord of the Rings* along with 24 frames per second film, form the basis of comparison that these interviewees reference as being more realistic than *The Hobbit* with regard to these particular instances concerning CGI. Such an idea is further emphasized by the interviewee who remarked that: 'the appearance of Bolg, there was something in his face, maybe because it was smooth and human-like rather than rugged and beastly, that gave the motion-capture feel to it, which scoots me a little out of my immersion again' [Female 22-25]. Furthermore, many of the interviewees felt that the difference between the CGI used in *The Hobbit* and the prosthetics use in the *Lord of the Rings* lay in 'the *Lord of the Rings*

having a lot more of that kind of gritty realism to it because a lot of things were actually done as opposed to animated' [Female 26-30]. However it may be that such a perception is created because HFR technology has surpassed that of CGI, meaning that 'the CGI is not far enough along yet that you can't visually tell the difference between a human in prosthetics and CGI' [Male 41-50]. Interviewees did note that *The Hobbit's* CGI was better in the 2D 24 frames per second format; thus, it may be that that CGI technology needs to advance to be seamlessly integrated into HFR films. However, as noted in the introduction, CGI has become a mainstay of cinema and audiences have come to expect CGI to be implemented at a high standard. Thus, it not be that the CGI itself is at fault but that the context in which these interviewees have grown accustomed to seeing CGI characters in has changed. For one interviewee, this change was derived from a personal expectation for the CGI:

I think we have entered a very interesting time in visual effects for film – once upon a time you would remark at how great the effects were of a film. However, I think they have reached such a consistently high standard that it is easier to comment on how poor a film's SFX rather than commenting on how good they are. It's come to the point where it takes a lot to amaze us. [Female 26-30]

It is also interesting to note that, in a similar vein to the above interviewees, a select few of the interviewees who appear to possess a great deal of knowledge about film production (as shown by the language used in discussing such points) pointed to *The Hobbit* being filmed in 5k digital as opposed to 35mm film as the reason why CGI and some of the prosthetics were unable to be integrated into the film without issue:

I take big issue with the digital, now you can see everything that's fake between painted sets and the prosthetic noses. I stress the element of 5K digital because it is very unforgiving (unlike the grainy canvas of film) and so blending the many computer-generated characters with their hyper-rendered surroundings calls for a more meticulous attention to detail for animators, and 48 fps adds even more encumbrance. Sadly not all of the CG characters meet this elevated standard. HFR isn't to blame for the flawed, inferior aesthetic of Middle-earth as bastardized by *The Hobbit* movies. It might not help it very much, but it is still not the sole reason for why Middle-earth now looks like a videogame by any stretch of the imagination. That reason is Peter Jackson. [Male 18-21]

Despite such a stance not being prevalent across the interviewees, it is worthy to note, and may possibly point to the need for further research to be carried out pertaining to CGI effects and HD digital film.

Many of the interviewees were ultimately ambivalent in their stance toward the CGI; many of these interviews would follow a seemingly formulaic discursive thread. Interviewees would express what they perceived was problematic with the CGI before going on to remark that Smaug was fantastic, or something to that effect, for the same reasons as previously discussed. Thus, Smaug was a piece of CGI that the vast majority of interviewees would emphatically point to as being not only an outstanding example of CGI but the highlight of their filmic experience in *The Hobbit: The Desolation of Smaug*. Although, it was suggested by some interviewees that the concentrated effort made in order for Smaug to be the pinnacle of the film's CGI was detrimental to other pieces of CGI:

He is rendered well enough as the character was WETA's number one priority, just like Gollum was in *An Unexpected Journey*. But such prioritization may have come at the expense of the orcs and all the other dodgy-looking CGI. [Male 18-21]

The whole sequence with Smaug looked good, I know they put all of their energy into that I'm sure, and these other shots they just didn't have the time to perfect them and that happens but it was far more noticeable that it happened in the Desolation of Smaug. [Male 26-30]

This may help to clarify why a small number of the interviewees made the comment that certain pieces of CGI within *The Hobbit* - typically the orcs, Azog and the Wargs - appeared as though they were unfinished. One interviewee suggested that 'It's kind of like there's been one guy working on that and another guy working on that' [Female 26-30]. This may have been a production issue that had a hand in creating a visual quality disparity with the CGI; however, such a point raised by the interviewees is only speculation.

#### 5.4 3D: Technology ‘At Play’

With regard to 3D, as previously noted, interviewees tended to be ambivalent toward the technology. Many of the interviewees quoted in the above section about the positive use of 3D would typically go on to comment about other negative effects of the 3D. One of those negative aspects was the framing of the film. As Atkinson (2011, p.148) contends:

There is the widely held view that cinematic filmmaking has its own set of codes, conventions, visual grammar and ‘language’. This has evolved through techniques such as continuity staging, whereby a combination of different shot sizes are taken from different camera angles in order to build sequences that deploy continuity editing, and other techniques such as montage, shot juxtaposition and jump cutting. Each of these techniques tends to be used to convey or imply dramatic moments and effects within the context of a learned and widely known cinematic system.

A point that (Sturken and Cartwright, 2001, as cited in Atkinson, 2011, p.149) assert ‘tended to facilitate the construction of narratives... [possibly because]... cinematic meaning is derived through the combination of images rather than from a single frame (Sturken and Cartwright as cited in Atkinson, 2011, p.149). Such cinematic conventions may stand true for the traditional filmic medium that they were developed for, that being two-dimensional film. However, ‘this approach is not so well received in S3D, since the depth effect takes a moment for the audience to adjust to as the convergence point will shift from shot to shot...consequently, the narrative pace of S3D is forced into slowing down, by holding shots on-screen for a longer period of time’ (Atkinson, 2011, p.152). Such a point was previously emphasised by the interviewees, who reported that there was a distinct qualitative difference in their viewing experience from watching *The Hobbit* in 2D as compared to 3D. Where it was purported that it was the underlying *feeling* that a singular 3D image provoked which ultimately provided these interviewees with a sense of narrative involvement. Thus, it may be that with 3D film, ‘every shot is rethinking cinema... rethinking narrative – how to tell a story with a picture’ (Kermode, 2010, as cited in Atkinson, 2011, p.148) because ‘this new visual tool in the filmmaker's palette does provide the potential to add another layer of storytelling depth to a narrative’ (Harpole, 1980, as cited in Atkinson, 2011, p.148) - so long as 3D is employed in a way that benefits this distinctly different cinematic medium.

It is interesting to note that the instances that interviewees would point to as being less successful 3D scenes were the ones that appeared to conform to these codes and conventions of 2D cinema:

The technology is awesome but I will say that it's hard to admire the beauty in the long-shots because there is so much detail if the cut of the shot is too short. It takes multiple viewings to truly admire all that detail [Male 31-40]

You could really tell that there was a lot the camera swirling around, all these angles constantly changing and the way they were cutting from image to image, everything was kind of thought of as this has to be done in 3D you have to watch it in 3D and it just made me really annoyed. It didn't give me anything positive to the film experience it actually added more negativity to the experience... I found it quite difficult to get into the story, because I'm a big fan of the *Lord of the Rings* as well and it was quite easy for me to just travel into that world, but I think it took me like 30-40 minutes before I felt like I was in the story because I was so focused on how the camera was moving, how the tempo was not fitting and there was like no space for breathing. In general, the film was edited with so many cuts and so many stories sliced together and I also know it's like that in the previous stories as well but it just didn't make any sense for the story, it felt like it was only for the sake of the camera. [Female 26-30]

Thus, for these interviewees it appears as though there are two elements at play hindering their immersion into these scenes. It may be that there is an element of crossover occurring in that the claimed codes and conventions of 2D that create and infer meaning and narrative are operating together in these scenes. Consequently, it may be that when these interviewees remark that the camera is continually cutting and never still, it is the 2D continuity editing, shot juxtaposition and jump cutting at play trying to convey or imply points about *The Hobbit's* narrative (Atkinson, 2011). In doing so, the visual spectacle of a 3D effect is not given enough time for the effect to be fully absorbed by the respondents. In turn, this may be why interviewees would comment that they found it difficult to immerse themselves into the scene, because there were two different cinematic 'languages' telling them two different stories at the same time. This might explain the perplexing sentiment that interviewees held when they would comment that the visual tropes characterized in these scenes 'just didn't

make any sense for the story'. Such a point is further highlighted when one of these interviewees went on to comment about the difference in her viewing experience when watching *Avatar* as compared to *The Hobbit*:

I remember *Avatar* not being too swirly with the camera, it still had these images where you could enjoy the composition of the 3D for longer moments...you could really dwell on the 3D, you got the chance to be transported...there were sequences in the film where there's a lot of action, there's a lot of tempo and they're moving around a lot but it was not constant, there were only two or three times where you were swirling around the landscape... whereas with *The Hobbit*, they're still cutting from frame to frame to frame... then swirling around the castle and going into the tunnel, you just don't get the chance to appreciate, you just want to sit there and look at this amazing 3D landscape for a while. [Female 26-30]

There may be some biological basis for 3D films needing to conform to a slower pace of editing. Egbert (2011) contends that when

Watching a 3D film, [the] audience's eyes...must converge at perhaps 10 feet away, then 60 feet, then 120 feet, and so on, depending on what the illusion is. So 3D films require us to focus at one distance and converge at another. And 600 million years of evolution has never presented this problem before. All living things with eyes have always focused and converged at the same point... consequently, the editing of 3D films cannot be as rapid as for 2D films, because of this shifting of convergence: it takes a number of milliseconds for the brain/eye to 'get' what the space of each shot is and adjust (as cited in Atkinson, 2011, p. 152).

However, in another instance, interviewees would further iterate that the framing and 3D effects in the film were contextually relevant; however, in doing so they also made the point that there were times when the framing of the film appeared to be dictated by the fact that it was trying to emphasize the 3D effect:

I noticed that the 3D technique or technology...kind of dictated the whole film...and I really didn't like it... I really noticed how much the framing of the image and how

they kind of moved the camera was sort of constantly dictated by it being a 3D film and I really thought that made it quite poor. [Female 26-30]

There's certain elements in the story that are amazing, the scene with the dragon I think that's really, really great, that's a kind of sequence where they move the camera, the way it's fitted for 3D is really good for the story - it suits it really well...but it doesn't make sense when they have these dialog sequences and then they're cutting and cutting, there's still that moving camera... you have the round table discussion with Gandalf and the dwarves and Bilbo and the composition is making love to the 3D effect all the time, there's constantly composition of somebody in the front frame, somebody in the middle, somebody in the back and then you have a little bit of a camera movement constantly around, there's just too much going on around, it's really exhausting... this is more like a romantic, poetic old school fairytale for me and I don't need it to be 3D...just wait with the good stuff until it is appropriate, don't smear it all over the film all of the time; sometimes it felt like it was only for the sake of the camera. [Female 26-30]

Interviewees also took issue with the continual movement and pace that the film took. It may be that with dialogue scenes and scenery shots, if these aforementioned effects are prevalent then 'it doesn't make sense', possibly because the constant movement on screen and creation of image depth through character composition may be creating too much intense visual stimulus that does not help progress the narrative or accentuate the visual context on screen. Furthermore, this might be why the previously mentioned interviewee felt that these scenes were 'exhausting', because of the continual use of these visual tropes throughout the film. One interviewee illustrates such a point"

It's where you have the frog's view and the camera is down on the ground and some orcs have to walk over the camera and into the frame. Or you have the camera moving through a tunnel or cave and there's these dogs barking at each other and they have to bark in front of the camera, it's too much, it's *every* third minute. [Female 26-30].

Such instances are already seen as unwarranted given the narrative context, beyond that there is the sense that the interviewees feel as though the continual framing on screen does not allow an opportunity to step back from such high intensity visual stimulus to 'breathe', as one

interviewee phrased it. It is also interesting to note that such problems with *The Hobbit* were evident in the 2D format also, where the cut of the film was seen as being done in aid of the 3D effects:

In the 2D version you could tell from the way they cut and the way they moved the camera around, it was totally dictated by the fact that they were doing it for 3D composition, which totally destroyed the whole narrative. It was backward, it dictated the way they framed the film. They started with the 3D and went from there; it should be the other way around. [Female 31-40]

Keeping with the discursive thread that *The Hobbit's* editing and composition were seen to be done in order to facilitate the 3D effects gave rise to a much more broader commentary regarding Peter Jackson's production choices and feelings that the process of making *The Hobbit* had changed. Many would use the *Lord of the Rings* trilogy to contrast their viewing experience with, and in doing so the point would be made that comparatively *The Hobbit* had a greater focus on technology, rather than the narrative. As a result of that, segments of the film were seen to lose touch with the narrative and again create impressions the Middle-earth world presented in the *Lord of the Rings* and *The Hobbit* are two different versions. It is worth noting that these interviewees were never of the mind-set that *The Hobbit* was entirely focused on technological effects; rather, interviewees would point to instances where *The Hobbit* appeared to be technologically driven:

I think Jackson should worry about making a good film and worry less about pushing the frontier on technology because that seems to be one of his primary goals around it, I think it's hindered the filmmaking process...3D I think he figures, I don't have to worry about having to use things like narrative to immerse the audience I'll just use 3D and that will help facilitate more immersion. He shouldn't even worry about all these special effects, novelty 3D shots' [Male 18-21]

As Gurevitch (2010, p.372) asserts, within the spectacle of cinema 'theatrical display dominates over narrative absorption, emphasizing the direct stimulation of shock or surprise at the expense of unfolding a story or creating a diegetic universe [because] the cinema of attractions... extends its energy outwards...towards an acknowledged spectator rather than inwards towards character based situations essential to classic narrative'. As it appears, what

Gurevitch describes is fitting with these interviewees; there is the sense that these interviewees feel the technology has the ability to overpower the film and become the centre of attention:

There's this drive in the film industry and I saw it a little bit in *The Hobbit* where if you've got this awesome technology you tend to want to use it, so most of the entire scene under the mountain didn't happen in the books so a lot of that was just to show off the technology, at least that's what it feels like to me. It's like they have said 'okay this is a boring scene we need to make this more interesting' so with the gold effect for instance I'm sure they wouldn't have written that in if they didn't think 'oh we can do this with the technology and it would look so cool'. [Male 18-21]

I think you always say 'the book is so much better than the film' but I feel with *The Hobbit* it's too much jelly, too much tempo, too much action for this kind of story for this kind of book, even though there's a lot of things going on in the book as well from one chapter to the next chapter there's a like a constant flow of action in the book. It just made me feel like there was too much focus on the creatures, too much focus on the 3D, too much focus on the CGI, too much focus on the creature designs and the orcs and too much beast. I remember in the book there's like this certain point where they're running away from these wolves and hiding up in these trees and in the book they're just in the trees hiding from these wolves but in the film the trees are on a cliff and then the trees fall down, they hang over the cliff and the wolves are like really big and muscly and everything's overdramatic and that's not how I wanted to see the story...it's like there are like these few moments in the film where you're like 'that could be so great' but there's too much of it'. [Female 26-30]

For a number of these interviewees, it appears that it isn't the presence of 3D and CGI that is the issue, because the same interviewees have praised the effects at one point or another; rather, it may be the precedence that 3D and CGI take within the film. It might be that these interviewees are keenly aware that the cinematic world of Middle-earth, the world they have all come to know some ten years ago, was not overrun with such effects, and hence there is the feeling that the use of this technology has encroached into this world simply because it is there to be used. Such an idea is prevalent among some of the interviewees, as one interviewee remarked:

WETA workshop and Peter Jackson and the whole production of the film has grown a lot since the *Lord of the Rings* films and you could see that a lot more creature designers are in there now and have many more people to work on the special effects, and it's kind of like an over flow of everything; it looks like they can do it now and now there over doing it. I feel like it's too much jelly. You know, the restrictions are not there anymore and they can just do it too much now...I think it has to do with WETA workshop and WETA digital are so much bigger now, Peter Jackson has so much freedom now it's not the same kind of attention there. In my head I think Peter Jackson likes a lot of creatures. The narrative is so much...it's too 'designee', it's too 'muscly' in a way. [Female 31-40]

The impression that is given by these interviewees is that they are not taking issue with the visual effects themselves, but rather the continual and unrestrained presence of them. Furthermore, it is the presence of effects that are seen to bear no affective resonance with the narrative context they subside in that is viewed as problematic. The effects are seen as being implemented simply because of an ability to do so. However, within this context it appears as though these interviewees are not being distracted from the narrative because of any one *singular* instance of 3D and CGI effects but rather the accumulation of these singular moments of 3D and CGI are being implemented so often that they become overt which in turn brings undue attention onto itself.

These more negative aspects of *The Hobbit's* 3D may stand to further illustrate what these interviewees want out of 3D cinematic experience. Ray Zone (2012) may have identified the idealistic goal of 3D film: 'the utopian dream of stereoscopic images in cinema, then, was a double-edged sword. The heightened realism is presented is alluring, but it had to be justified in the context of narrative'(as cited in Allison, Wilcox and Kazimi, 2013, p.157). Key phrases used by these interviewees were that the use of the technology was either seen to 'make sense' or 'not make sense' within a given scene. The fact that interviewees would typically comment about specific scenes that were good for the 3D effect implies that 3D technology is still moving out of its infancy as a cinematic apparatus; however, it also reinforces the statement Zone makes as it shows how a potential audience's relationship with 3D effects is

one characterized by discernment, in that the technological effects must operate in a way that is seamless with the narrative.<sup>14</sup>

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<sup>14</sup> Refer to section 5.2 '3D: Realism, Immersion and Presence', for more detail on where 3D was seen to fit seamlessly with the film

### 5.5 Two Tales of Immersion: Questionnaire Respondents and Interviewees

In order to explain the relationship that interviewees had with 3D HFR technology and the influence it had on narrative immersion, here I am digressing slightly to consider the points raised by the earlier questionnaire respondents. When looking at the response trends overall, there are some interesting points to be observed. It is evident that if a respondent was to take a positive or negative stance toward the 3D HFR technology and its impact on their cinematic experience [Question 15], such a position was a reliable pointer to how the respondents would answer the remaining open-ended questions. With respect to those 59.68% of respondents (n=259) who took a positive stance toward the technologies' role in their film experience, the majority would typically answer the remaining questions in a positive manner. Of these 259 respondents, 75.00% went on to indicate that *The Hobbit* was a better 3D film compared to others they have seen and only 2.38% felt *The Hobbit* was a worse 3D film than others [Question 14].

Furthermore, the percentage numbers of positive responses drops to 65.45% when respondents were asked about 3D HFR's impact on the CGI [Question 13] and with that question negative responses rose to 12.20%. Such a trend is prevalent in the remaining open-ended question concerning the technologies' effect on narrative immersion [Question 15], where positive responses further drop to 60.77% and negative responses again rise to 25.38%.

Such a response trend it also apparent for those 18.66% of respondents, 81 individuals, who took a negative stance toward the technologies' role in their film experience, where, typically the majority would answer the remaining questions in an increasingly negative manner. Of these 81 respondents just over half, 53.53%, felt *The Hobbit* was a worse 3D film than others they have seen while 18.87% felt it was better [Question 14]. Moreover, 66.22% of these respondents took a negative stance and 6.76% took a positive stance toward the technologies' effects on the CGI [Question 13]. Such a trend is nearly extinguished in responses made toward 3D HFR's impact on narrative immersion, where nearly all of these respondents, 87.30%, took a negative stance. Moreover, positive responses had also dwindled to only constitute 1.59% of responses.

Such a point is also raised in relation to those individuals who were ambivalent toward the technology (18.43%; 80 respondents), and its effect on film experience [Question 15]. It

seems as though the majority of this subgroup have made a more assertive decision in regard to the technologies' effect on the narrative, where 66.67% of these initially ambivalent responders felt that the technology was a hindrance to narrative immersion.

Thus, what becomes apparent from these patterns of response is that the majority of these respondents were positive toward the implementation of 3D HFR into *The Hobbit*, where the technologies were seen to improve respondents cinematic experience and that 3D HFR was an improvement over other 3D films they have seen. Therefore, it may be the case that 3D technology itself has improved, along with the ways it is used in *The Hobbit* as well as other films such as *Avatar* or that improvement may have arisen because of the addition of HFR. However, despite these improvements responses suggest that the technology was less effective in its interaction with CGI as well as aiding narrative transportation. Such contrasting responses is quite curious, in that *The Hobbit's* 3D HFR technologies can be on the one hand heralded as a success, but on the other they are seen to be a hindrance to narrative immersion, which is a critical part of viewing a film.

When we note the drop from the initially positive responders with regard to 3D HFR's ability to work with the CGI [Question 13] and then look deeper into the reasons for the negative and ambivalent responses to the aforementioned question [Question 13], the most recurring remark was that CGI and any imperfections in the CGI's construction were made to stand out from the Middle-earth world that it was placed in. Such a point may be why the respondents felt that 3D HFR did not help narrative immersion, because the heavy-handed CGI, which was seen as being a visual distraction, potentially acted as a constant reminder that the film and narrative was a context that only subsisted on the silver-screen. Such an idea is even expressed by a small number of the interviewees:

I took it at what it was, I just immersed myself in the entire movie for what it was and then reflected on it...it felt less real than what it could have been, but it didn't take away from my experience watching the movie, except for the Wargs, they did seem really CGI and it bothered me...they either missed some CGI points or they're supposed to look like that because it's a children's movie, but I just had to look at it for a little while and I had to fight with myself and justify what he [Peter Jackson] did.  
[Female 18-21]

What was found was that many of the interviewees took issue with the CGI not melding into the film. Despite this being a recurring point of creating a distraction from the narrative it was not the exclusive reason as to why 3D HFR was seen to be a hindrance to narrative immersion for some. It is important to note that a large number of interviewees did feel that the 3D HFR technological effects helped to transport them into that narrative to a greater extent than the visual effects of 2D could. These interviewees' comments would sit in line with what Allison, Wilcox and Kazimi (2013, p.158) assert can be one of the main functions of 3D, its potential ability to 'have a profound effect on the viewers' visual experience and, as a result, on their understanding and response to these films'. Such an idea is further emphasised by the interviewees who commented about 3D effects 'making sense' to the narrative context that the effect was used. Typically, the visual experience that Smaug in 3D presented was pointed to making the scene more perceptually realistic and immersive because the effect further reinforced what the narrative was trying to convey about Smaug. The added volume and protrusion of Smaug was seen to reflect what encountering a dragon in real life would possibly feel like.

On the other hand, interviewees would also remark that the visual differences in image quality and created a cinematic image that was seen as being 'un-cinematic' as the aesthetic of *The Hobbit* in HFR differed from their expectations of what a film should look like. Furthermore, several interviewees noted that the visual aesthetic of *The Hobbit* did not match that of the *Lord of the Rings* trilogies. As a result of this visual difference these interviewees felt that the 2D version of *The Hobbit* was more immersive, because its 'grittier' filmic grain was seen to mirror this *Lord of the Rings* aesthetic more closely:

I wanted these movies to be the same, I wanted them to fit with the *Lord of the Rings*, I wanted them [*The Hobbit*] to look like the same world, I wanted to feel the same texture and same visuals and everything so 2D fits that expectation more than 3D.  
[Male 26-30]

It is interesting that despite a number of interviewees feeling 3D HFR made for a more immersive and realistic cinematic experience, 3D HFR technologies were ultimately seen as being unessential in facilitating narrative immersion:

I would think that the technology helped making the audience a part of the story but it didn't help tell the story...it did help the audience kind of live the situation. [Female 26-30]

I don't think it did either to the narrative, because the story would be the same with or without 3D effects or HDR, but I feel it contributed positively to the way the audience felt whilst watching the films. [Female 22-25]

Thus, for interviewees such as these it does not seem accurate to characterize their responses as inferring that 3D HFR hindered narrative immersion. Rather, it appears to be the case that 3D HFR technology effects, and resulting affects, were not essential to narrative immersion. It may be that 3D HFR technology played a minimal part in facilitating narrative immersion, as it would appear the majority of interviewees hold a pre-existing relationship with Tolkien's *Lord of the Rings* and *The Hobbit* along with Jackson's cinematic adaptations of these works appears to have created a viewing environment where the narrative takes precedence over any visual effects. This idea is further supported by Chin and Gray (2001, p. 10) who

believe that any discussion of the *Lord of the Rings* movies' power, effects, or meaning will be flawed and inadequate without first discussing those of the books, since, to Tolkien fans watching the films, the former will only ever be a correlate of the latter. Moreover, while our focus in this essay has been on Tolkien fans, pre-viewers will arrive through other texts too –Sir Ian McKellen fans, Peter Jackson fans, fantasy fans... and each of these groups will likewise bring their own dominant pre-texts to the films.

Furthermore, for the majority of interviewees, if they took issue with an aspect of the film that was altered from Tolkien's books they would then have to mentally 'justify what Jackson did' [Female 18-21] which suggests that the pre-texts interviewees engaged with before watching *The Hobbit* impacted the way they engaged with the film.

Similarly, some interviewees were concerned with *The Hobbit* being filmed in 3D HFR as the results may aesthetically change the silver screen Middle-earth they have come to know and love. Interviewees would remark that such issues were resolved because of the trust they

place in Peter Jackson, in having brought the *Lord of the Rings* trilogy to screen and that he himself is a Tolkien fan and his interpretations and resulting films are engaged with as extension of Tolkien's work.

In order to ascertain whether interviewees' existing relationships with intertexts pertaining to Tolkien's work affected their narrative engagement with the *The Hobbit: The Desolation of Smaug*, interviewees were first asked how many times they have read Tolkien's novel *The Hobbit* and 'The *Lord of the Rings* trilogy, and how many times they have watched Peter Jackson's filmic adaptations of the *Lord of the Rings*. Furthermore, the interviewees were then asked if they considered themselves to be a fan of Tolkien, did this existing relationship affect their engagement with the *The Hobbit*? And if so, how?

Firstly, a large number of the interviewees are high consumers and avid fans of both the *Lord of the Rings* novels and films. Many interviewees claim to have read Tolkien's novels 'countless times' or to have 'read them every year'. Such interviewees would go on to comment about Peter Jackson's *Lord of the Rings* trilogy in a similar fashion, asserting that they have watched each film hundreds of times. Thus it is clear that for these interviewees, their engagement with the world of Tolkien runs deep, to a point that it is seemingly ritualistic. Furthermore, these interviewees would talk about Tolkien's work, be it the novels or the films, in a very personal and personified manner. There is an impression that, to them, they are more than just novels and films but rather a way of life they have known since childhood, in many cases:

Tolkien's Middle-earth has been my respite and constant companion ever since I first found it at age 19...I'm now 62, it became my refuge. [Female 61 plus]

I just desperately wanted it [*The Hobbit*] to return to that world and feel like it was part of this *Lord of the Rings* saga [Male 26-30]

As such, it appears that this high level of emotional engagement with both Tolkien's and Jackson's work has affect the ways they engage with *The Hobbit*. Many of these individuals commented that they have been eagerly awaiting the release of *The Hobbit* films, because for them, *The Hobbit* stands as a return to the world they hold so dear, or as one interviewee said, *The Hobbit* 'felt like coming back home':

I longed to see my friends on the big screen. *The Fellowship* pulled me in to the point of living in the theatre. One Sunday I watched it 3 times running. I simply heard the call of the opening music and went into the next theatre to see it again. It was like coming home, or to a reunion of long-lost friends. [Female 61 plus]

One interviewee was so active in her desire for *The Hobbit* to make it to the silver screen that she ‘signed the ‘let *The Hobbit* happen’ petition back in April 2004’. [Female 61 plus]

As we have seen above, some of these interviewees have a strong emotional tie to the subject matter; as such, many of these interviewees signalled the trust they place in Jackson to adapt and create the cinematic world of Tolkien. It is clear that Jackson’s adaptations are held in high regard with these interviewees because he is the individual responsible for bringing their *Lord of the Rings* trilogy to the screen with such grandeur. Interviewees would often refer to these films as being ‘Peter Jackson’s Middle-earth’, in a sense indicating two distinct worlds of Middle-earth - Tolkien’s, and Jackson’s. Moreover, some of these interviewees reported being initially dismayed by the visual aesthetic or plot deviations from Tolkien’s novels in the *Desolation of Smaug*. However, interviewees were willing and in some cases predisposed to accept these deviations simply because these films are Jackson’s creative interpretation of Middle-earth. For many, any negative reactions to the film were justified as being a part of Jackson creative interpretations or in some cases the limitations that occur from adapting from page to screen. For many of the interviewees any negative sentiment taken toward the film was ultimately justified as being ‘another way to experience the world of Tolkien’, even if it took some time before coming to such a resolution. Thus, the tie of what Jackson achieved with the *Lord of the Rings* trilogy has seemingly formed a flow on effect of trust with *The Hobbit*. Two respondents epitomized this with their comments:

I always hoped that *The Hobbit* could be adapted to film. So when I heard that Peter Jackson would again bring Middle-earth on screen, I was looking forward to it with much expectation. As The *Lord of the Rings* films were actually what first introduced Tolkien’s world to me, I believed in Peter Jackson and his crew. [Female 26-30]

Truthfully if *The Hobbit* was made to be tied into the existing *Lord of the Rings* series by anyone but Peter Jackson it wouldn't be right. [Male 18-21]

Furthermore, one interviewee was open in their ‘Jackson bias’ toward *The Hobbit’s* first instalment, *An Unexpected Journey*, where the comment was made ‘I know there was a fair amount of criticism for the *Unexpected Journey* with people saying the pacing was too slow, they didn’t really do anything, etc. but I disagree... due to my love of the book, of the *Lord of the Rings* and of Peter Jackson’ [Female 26-30]. Thus, what appears to be happening is that these interviewees are able to negotiate with themselves and accept any perceived filmic indiscretions because these come to be seen as Peter Jackson’s creative adaptations:

I was so excited about these movies I wish they could have tried them [3D HFR technology] on something else, if they had tried that on *Avatar* then I would have been like this is awesome, but the fact that it was tried out on something so close to me, something I was so excited about that I just desperately wanted it to return to that world and feel like it was part of this *Lord of the Rings* saga, it was just kind of unnecessary to me to do that. I totally respect the choice to do it... ‘I totally get why he did it, and I think it’s amazing and extremely innovative of him to do that... I think it was a really bold move, it was cool and I tried really hard to like it. [Male 26-30]

However for some, Jackson’s adaptation of a much loved novel did yield some initial backlash as many of the interviewees have built a their own mental version of Middle-earth since reading the books.

Peter Jackson has forever altered my perceptions of who the various Tolkien characters are, in my mind. At first I considered this to be a problem, however his films, while not perfect, have embraced the essence of the stories and characters. Rereading the books renewed my original love for the story and allowed me to appreciate PJ’s interpretation of the books even more. [Male 41-50]

Another subgroup among the interviewees held Peter Jackson’s filmic version of *The Lord of the Rings* trilogy in higher regard than Tolkien’s original novels. These interviewees have not read Tolkien’s novels at all, or only once or twice. However, these interviewees are still avid fans of the *Lord of the Rings* trilogy and Tolkien’s Middle-earth:

Never read the books, just saw the first *Lord of the Rings* movie and fell in love instantly. [Male 31-40]

In a similar way, other interviewees were first taken by Jackson's the *Lord of the Rings* trilogy, however that then prompted them to go back to the books to explore the origins of the films:

I was a movie fan first, after watching the *Lord of the Rings* I got into Tolkien and since then I've gone through everything and read everything many times and I am extremely familiar with it now and I love it. But I wasn't a fan before the movies so I always came from a different perspective. [Male 26-30]

It is interesting to note that a cohort of the interviewees were pre-emptive in their engagement with *The Hobbit*, following the film's production through production blogs, film trailers, reviews and online forums such as the onering.net. For these interviewees at least, the web has enabled them to further build or maintain a heightened fandom with *The Hobbit* and it would appear that such pre-emptive engagement has played a part in how these interviewees engaged with the film. This is illustrated by the language used by these interviewees which is seemingly indicative of an audience 'engagement that visualizes a non-commercial, shared ownership' (Shefrin, 2004, p.275) of content surrounding Tolkien's and Jackson's Middle-earth:

I was shocked when I first saw the promo picture of Thorin, as that was very different from what I thought. But the strange thing is, I accepted it, once I saw those behind scene features and video-blogs, I became agreeable to Peter Jackson's version. I know there are many Tolkien purists thinking the films should not be this way. But for me, Peter Jackson has brought the story to a new level. [Female 26-30]

Other interviewees' pre-emptive engagement with *The Hobbit* centred upon the technological hype that surrounded the film. Some of the interviewees were quick to note the negative discourse that surrounded the technology in *The Hobbit*; however it would seem that any negative commentary surrounding the film was not a deterrent to watching the film in a particular format:

I had been hearing negative reviews before I came to see the film. People said that 48 frames per second had made film looking like a television show... when I was going to *The Hobbit* I apprehended disagreeable surprises from the movie because of HFR. But I had seen nothing of the kind. The film looked great and beautiful. [Male 41-50]

We read a review of *Desolation of Smaug* before we went to watch it because we were wondering what format to watch it in and we did read that it made a lot of people dizzy so they didn't enjoy the film, but then I thought I wanted to see it in 3D because I saw the first film in 3D so it didn't make sense to skip out on 3D this time. [Female 26-30]

One interviewee was ultimately disappointed by Jackson's filmic adaptations of *The Hobbit*, whereby the disappointment seemed to stem from the fact that:

I think Jackson should worry about making a good film and worry less about pushing the frontier on technology because that seems to be one of his primary goals around it, I think it's hindered the filmmaking process [Male 18-21]

However, the underlying relationship these respondents hold with Tolkien's and Jackson's work reiterate the idea that an existing relationship has created a set of expectations around how *The Hobbit* should be made. This particular interviewee went on to comment that when filming *The Hobbit*:

If you're going to follow the *Lord of the Rings* you have to have some continuity [Male 18-21]

While interviewees did take issue with the fact that the narrative structure of Jackson's *The Hobbit* deviated from the original narrative work of Tolkien, this was something that interviewees were typically able to accept as being a part of the process in adapting a novel to screen:

I had a severe issue with it in *Lord of the Rings*, especially *Fellowship* because it was the first one. It wasn't until I mentally processed that this happens to be a story loosely based on the same book but it's not the same so get over all the changes

Jackson made, then I was able to enjoy *Two Towers* and *Return of the King* much, much more. I got past that with the first set so I don't think I was nearly as bothered by the changes this time around, I was ticking [the narrative adaptations] off as I saw them, some I liked, some disturbed me but not overly that we didn't buy the DVD's and go see it multiple times. [Male 41-50]

I'm kind of a purist on Tolkien's stuff and I'm really picky about what they do put into a movie and what they don't, and of course I could nit-pick to death about the changes in the *Lord of the Rings* and *The Hobbit*, but I still come away enjoying the movies and enjoying the experience. I'm not going to dislike it for what Jackson did to them because it related to Tolkien. [Female 22-25]

These interviewees have engagement with the literary work of Tolkien and Jackson's *Lord of the Rings* film trilogy has created a clear emotional connection to *The Hobbit*. It would seem that these pieces of work constitute more than just a filmic adaptation of Tolkien's *The Hobbit* novel, rather it appears to represent the creation and presentation of a visual world that they have imagined for a considerable amount of time. As a result of that, it may be that these interviewees have their own subjective ideas of how Middle-earth should be presented on screen.

## Chapter 6: Concluding Thoughts

As I have noted elsewhere in this thesis, it is important to emphasise that any potential audience positions unveiled here are not generalizable to *The Hobbit* audience as a whole, nor can they be seen as representative of audience reactions to 3D HFR cinematic technologies per se. However, the findings from this project do suggest that the ways in which audiences have been responding to 3D film may require more detailed and extensive examination.

The majority of both questionnaire and interview respondents commented that the 3D in *The Hobbit* was utilized in more effective ways than in previous 3D films they have seen. Many of these respondents positively praised *The Hobbit's* 3D for staying away from overt emergent effects, which was seen as being unlike previously watched 3D films. This was a main reason that many felt their overall 3D film experience was improved upon previous cinema outings. The way that these respondents would talk about the 3D effects in *The Hobbit* is in line with the views of Atkinson (2011, p.149), who suggests that *Avatar's* use of 3D effects represents a reconfiguration of traditional notions of the 3D aesthetic:

Visual aspects... [are]... the main mechanism by which to convey the story, and the characters' emotions and relationships. The shots contain much more foreground and background detail in which we are immersed in the beauty and detail of their construction and their rich visual imagery. They also tend to be held on-screen for longer periods of time, encouraging a prolonged indulgence with the image.

The points raised by Atkinson (2009) in relation to *Avatar*, a film that Burnett (2013, p.209) asserts 'is such an important example of the medium's growth', are reflected in respondents' comments about *The Hobbit*. A major point of improvement within *The Hobbit* was the perceived use of 3D to establish depth and volume within the image, rather than relying on the 'gimmick' of projecting objects at the audience. Respondents referenced failings such as other 3D films' use of overt emergent effects to help explain what the 3D effects in *The Hobbit* did *not* do. For many of the respondents, this reconfigured use of 3D effects was noted as greatly improving the cinematic experience while also increasing perceptions of realism, which was seen to facilitate immersion to such a point that some respondents felt physically present within the film. As the research sought to gauge reactions to 3D HFR in

*The Hobbit* in order to understand whether these technologies resulted in a qualitative difference to audiences' viewing experience, particularly their perceptions of realism and immersion, it would appear that 'the assumed dissatisfaction of the cinema [3D] audience...based around objects being thrown at the audience' (Johnston, 2012, p. 245) may have been resolved. Furthermore, the way in which respondents would comment about emergent 3D effects highlighted the *continued* disdain that is held toward use of emergent effects. Thus, it is worth reiterating Gurevitch's (2013, p.397) point that 'the problem with the commonly told narrative of stereoscopy's demise... [is that]...it perpetuates a discursive framework in which the failure of stereoscopy is written into its founding history', as it would seem this discursive framework of the format's historical failings has indeed encroached upon the respondents' current view on 3D film. This point adds weight to Bowles' (2011, p.104) remark that 'cultural memory of prior cycles of 3D...might affect popular understanding of 3D this time around'. Therefore, for 3D film to move beyond these historical perceptions of failure there needs to be a deliberate reshaping of expectations that audiences themselves have toward the format (as was seen to have been achieved with James Cameron's *Avatar*).

Conversely, there was one 3D emergent effect that was typically heralded as a great success. The vast majority of the respondents were in clear consensus that the construction of Smaug and its attendant 3D effects were extremely effective in giving an indication of the size and volume of the dragon. It is curious that many of the respondents were so clear in their disdain for overt emergent effects, but such an effect with Smaug was nevertheless seen as being a positive use of this technique. This suggests that the deployment of a 3D emergent effect must be relative to the narrative context in which the effect features, or at least, not be inconsistent with the narrative content or tone.

Many of the respondents' comments about *The Hobbit's* use of 3D, and especially the addition of HFR, included the assumption that it operates as a new filmic medium. While Turnock (2011, p.31) remarks that 'the producers of *The Hobbit* have been caught flatfooted as they face surprise resistance to the particular aesthetic of HFR', for most respondents this resistance was temporary, as illustrated by those who required a short period of time to adjust to the new visual aesthetic that HFR presents. Overall it would appear that opposition to HFR quickly faded and its effects were largely embraced as HFR was seen to resolve complaints of eye-strain and blurriness, an issue that has notoriously plagued 3D films for some time.

While many of the respondents were quick to note the physiological issues they have previously faced, many remarked that *The Hobbit* in HFR did not suffer from image strobing, nor did the vast majority of respondents become visually fatigued from watching the film. As such, it would appear that the academic literature regarding HFR being the saviour of 3D might have gained greater credibility. Furthermore, many felt that *The Hobbit* in HFR created smoother, more fluid and clearer on-screen action; improvements that many felt arose through the removal of image strobing. The majority of respondents found HFR to be a positive addition to the film, whereby the increased screen fluidity made action scenes and camera panning smoother and easier to follow, and increased screen clarity brought many of the respondents closer to the film. They reported being able to see more intricate details in a way that many likened to real life. Many saw these improvements as creating a more realistic, immersive and for some presence-inducing experience.

Such points, however, were a focus for strong disagreement and debate. For a smaller portion of the respondents the increased on-screen smoothness was seen as making the film look 'cartoonish', and the increased screen clarity simply allowed any visual artefacts to become more apparent. In many cases this was particularly related to the failure to effectively (seamlessly) integrate CGI with the 3D HFR, but respondents also noted that prosthetics were more evident as artificial effects.

While the majority of the respondents regarded 3D HFR as improving their cinematic experience and serving to make the film more realistic and immersive, many nonetheless felt 3D HFR was not essential to this film's narrative. While it would appear that HFR has solved some of the technical and physiological problems that 3D film have faced, there are obviously broader assumptions about the types of cinema that should and should not be employing 3D. The prevalence of such a response may be due to the nature of the self-selected respondents who engaged with the research. It was apparent from the questionnaire that the majority of respondents (51.41%) did not feel 3D HFR aided the narrative; however it was not until interviews took place that it became evident that there was a high level of emotional engagement with both Tolkien's and Jackson's work, which shaped the ways the interviewees engaged with *The Hobbit*. There was a clear view expressed by the interviewees that any 3D effects needed to fit within the film's narrative context in order for the effect to both flow seamlessly and serve to aid the narrative.

While many interviewees noted that *The Hobbit* did implement 3D in such ways and sought to offer an objective critique of the effect that 3D HFR had on their filmic experience, there was the overriding sense that underneath any positive or negative comment regarding the film's technological effects lay an emotional connection to the content matter, which meant the majority of these interviewees were not going to dislike *The Hobbit* 'for what Jackson did...because it related to Tolkien'. Thus, there is the strong suggestion that many of the interviewees ultimately responded favourably to the film because of a pre-existing loyalty to Tolkien/Jackson, regardless of any 3D HFR technological innovation that may have enhanced their film experience, or detracted from it. These interviewees anticipated being immersed in the presentation and narrative of the film long before they took their seats in the cinema. As many of these individuals commented, they have been eagerly awaiting the release of *The Hobbit* in some cases for decades; the film stands as a return to the world of the *Lord of the Rings* they hold so dear.

Further, it would seem a strong emotional connection these interviewees hold with the *Lord of the Rings* Middle-earth world they were first introduced to *on screen* influences the way *The Hobbit* was engaged with. As one interviewee remarked, *The Hobbit* 'felt like coming back home'; they are coming back to the filmic Middle-earth world that Peter Jackson's earlier *Lord of the Rings* established. Respondents commenting on 3D HFR's impact on the CGI reiterate such a point. There were clear instances where CGI within *The Hobbit* was seen as being unrealistic because of expectations established by the *Lord of the Rings* cinematic trilogy. These respondents would typically remark that the clarity of HFR removed the 'grittiness' and CGI craft associated with special effects from the earlier trilogy.

As noted above, there are limitations to the generalizability of the research findings due to the respondents being self-selected and the source of their recruitment most likely coming from online Tolkien and Jackson fan communities. Thus, the responses made could potentially be skewed due to an existing relationship with the content matter. As we have seen, in some cases, this relationship predisposes respondents to have quite strong and detailed expectations about how *The Hobbit* and Middle-earth should aesthetically appear. While it does appear that the interviewees were able to distance themselves from their emotional attachment to the content to answer the research questions, there is the overriding sense that ultimately the 3D HFR technologies and the aesthetic they presented was a subsidiary issue. This does not mean that these interviewees found 3D HFR technology to have clashed with the narrative,

but that the film ultimately stood more particularly as a return to *their* Middle-earth world. Thus, there is a bias at play that must be taken into consideration when engaging with the research findings. These responses are consistent with those reported by Michelle et al. (2015), who found that existing fan communities of Tolkien complicated the responses to the use of 3D HFR technologies and their impact on *The Hobbit* films. While Michelle et al. (2015, p. 34) found that ‘cinematic spectacle was a key part of what audiences expected from *The Hobbit*’, ultimately the film stood ‘primarily as a route to returning to their beloved Middle-earth’ (p.34). These results perhaps suggest why the majority of the current respondents felt 3D HFR improved their filmic experience, helped in creating a better 3D film than others, but did not impact narrative transportation.

Nonetheless, the current findings should not be dismissed because they are not representative of *The Hobbit*'s or 3D HFR film's broader audience. When situated alongside the existing literature regarding audience reactions to 3D film there is a clear dichotomy in responses. Much of the academic literature explains that audiences were in direct opposition to both overt emergent effects and image strobing that caused eyestrain and headaches. These were two dominant issues cited for the continual demise of 3D film. However, when we compare this project's responses against the current research it is interesting to note that respondents would directly comment on the lack of emergent 3D effects coinciding with 3D being subtler and used for establishing depth on screen. Furthermore, the decreased image strobing was seen as improving the physiological experience had by these respondents, but as also enhancing the image quality and allowing more detail to be seen on screen. Thus, it appears as though some of the fundamental issues that were seen to historically plague 3D cinema have been rectified within *The Hobbit*, according to the research respondents. We cannot assert that all of *The Hobbit*'s audience members took a similar stance. However, these results indicate that 3D film may have been reconfigured to the point that we are dealing with a new 3D film medium.

If anything, the results presented here stand as a call for further research to be conducted in this area, as these findings indicate that existing understandings of how audiences have been engaging with 3D film need to be changing to reflect that 3D film may have moved some way in gaining credibility as a cinematic format that can present more than emergent effects. With the inclusion of HFR it seems as though the technology may have counteracted some of the aesthetic issues that have been seen to previously plague 3D film audiences' viewing

experiences. In tandem with the reconfigured use of 3D effects, these developments suggest that 3D film may now stand as a reinvigorated format that requires a fresh critical analysis. Thus, further research centred on a naturally occurring audience of 3D HFR films, beyond the fantasy-adventure genre of *The Hobbit*, would provide a more representative insight into how the audience as a whole is engaging with 3D HFR and any effect it has on the film experience more generally. This project ultimately provides strong support for such wider research, given the prospect that 3D HFR will become an addition to mainstream cinema. More specifically, the research results illustrate that 3D HFR and CGI technologies have the ability to meld together seamlessly and appeal to a mainstream audience, although there are still a number of aesthetic issues that need to be carefully addressed. However, with Peter Jackson choosing to film the entire *Hobbit* trilogy in 3D HFR (despite HFR's initial negative reception) and James Cameron electing to implement 3D HFR in the upcoming *Avatar* sequel it would seem that filmmakers are willing to bring these new technologies into the cinematic forefront. While 3D HFR filmmaking is still in its infancy, it appears there will be further opportunities to perform more detailed research into the complexities of its reception.

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## Appendices

### Appendix 1: Online Questionnaire

**Approximately how many 3D films do you think you have you seen?**

- 1-5
- 6-10
- 11-15
- 16-20
- 20+

**2. Please specify what it is that you gain from watching a film in 3D as compared to 2D?  
(Check as many as you feel applicable)**

- Visual stimulation
- Entertainment
- Increased engagement with the narrative
- Decreased engagement with the narrative
- Further transported or emotionally engaged with the narrative
- Headache, sore eyes or nauseous etc.
- Nothing at all
- Other (please specify)

**3. In what formats have you seen *The Hobbit: the Desolation of Smaug*?**

- 2D
- 3D
- HFR 3D
- On DVD or BluRay
- As a download

**4. In your view, did the 3D technology improve or worsen your overall film experience?**

- Greatly improved the experience
- Somewhat improved
- No difference
- Somewhat worsened
- Greatly worsened the experience

**5. Did the 3D technology make the film more or less realistic?**

- Significantly more realistic

- Somewhat more
- No difference
- Somewhat less
- Much less realistic

**6. Did the HFR (high frame rate) technology improve or worsen your overall film experience?**

- Greatly improved the experience
- Somewhat improved
- No difference
- Somewhat worsened
- Greatly worsened the experience

**7. Did the HFR technology make the film more or less realistic?**

- Significantly more realistic
- Somewhat more
- No difference
- Somewhat less
- Much less realistic

**8. How strongly immersed did you feel while watching *The Hobbit: The Desolation of Smaug*?**

- I felt very strongly immersed in this film
- I felt somewhat immersed
- Don't know / not sure
- I was not very immersed
- I was not at all immersed in this film

**9. Compared with other 3D films you have seen, did the use of HFR have any impact on your level of engagement with the story of *The Hobbit*?**

- 3D HFR greatly increased my level of engagement
- It somewhat increased my engagement
- No difference
- It somewhat decreased my engagement
- 3D HFR greatly decreased my level of engagement

**10. Did the visual impact of the 3D HFR technologies distract you from the narrative at any point?**

- Yes
- No

Explain further

**11. How would you rank the quality of the CGI (computer generated imagery) in *The Hobbit: The Desolation of Smaug* ?**

- Very poor
- Poor
- Average
- Good
- Very good

**12. On average, how many films containing a significant amount of CGI would you watch each month?**

- None
- 1-2
- 3-5
- 6-10
- 10 or more

**13. In your view, what effects did the use of 3D HFR have on the appearance of the CGI in *The Hobbit: The Desolation of Smaug*?**

**14. If you have seen previous films in 3D please specify how *The Hobbit: Desolation of Smaug* compares to them?**

**15. Please specify, in your own words, what effect the 3D and HFR technologies had on your viewing experience of *The Hobbit: The Desolation of Smaug*?**

**16. Are you female or male?**

- female
- male

**17. How old are you?**

- 17 and under
- 18-21
- 22-25
- 26-30
- 31-40
- 41-50
- 51-60
- 61 or over

**18. What is the highest level of education you have completed?**

- Masters or Doctoral degree;

- Bachelors degree;
- Professional qualification;
- Baccalaureate or A-levels;
- University entrance;
- High school diploma or leaving certificate;
- I did not complete secondary/high school

**19. Which of the following best describes the nature of your present or former employment?**

- Student;
- Homemaker/caregiver;
- Manual worker;
- Tradesperson;
- Clerical or administrative worker/ service and sales worker/ office worker/ call-centre worker, etc.;
- Salaried or self-employed creative worker: artist/ musician/ media producer/ graphic designer;
- Self-employed technical or professional worker;
- Small business owner-operator;
- Manager or executive in public or private sector;
- Salaried professional: e.g. school teacher, nurse, accountant, public servant;
- Higher level professional: e.g. doctor, lawyer, lecturer/professor, scientist, engineer;
- Military;
- Other

**20. Have you ever worked in the film or television industries?**

- Yes
- No

**21. Have you studied media production to an advanced (tertiary) level?**

- Yes
- No

**22. Relative to the average income in your country of residence, which of the following best describes your income level?**

- Lower income/ unpaid
- Lower-middle income
- Middle income
- Higher-middle income
- High income
- Decline to answer

**23. What is your nationality?**

**24. What is your present country of residence?**

Thank you for taking the time to complete the questionnaire it is very much appreciated. If you wish to contact me regarding the questionnaire please do so using the details listed below. Darren Elliott email: [darrenelliott2@gmail.com](mailto:darrenelliott2@gmail.com)

**25. If you would like to be involved in a one-hour focus group (or individual interview) please leave your contact details below:**

## Appendix 2: Email Questionnaire/Interview Questions

*Thank you for taking the time to share some more of your thoughts about 'The Hobbit', I do sincerely appreciate it your help. If you may, please answer as many of the questions in as much detail as you want. When you have finished just email a copy back to me. Thank you once again, kind regards, Darren.*

If you have seen *The Hobbit* in both 2D and 3D, what were the main differences between the two formats?

In what ways did the 3D technologies in *The Hobbit* differ from other 3D films you have seen?

What made *The Hobbit* more or less realistic than other 3D films you have seen?

Was there a specific scene in *The Hobbit* where the 3D stands out? If so, why do you think that scene is special?

Were there any specific parts of the film where the visual effects stood out as being used very well or unwell?

In what ways did the visual effects of the characters in *The Hobbit* affect your film experience?

In what ways did the HFR impact your viewing experience?

In what ways did the HFR succeed or fail in creating a more realistic world?

Some have said the HFR made the film look like a 'speed up' or like a 'video game' to what extent do you agree or disagree with these comments?

Was there any scene in the film where the 3D, HFR or CGI technologies added or take away from your viewing experience?

In what ways did the 3D, HFR and or CGI help or hinder the film's narrative?

In what ways do you think the 3D and HFR technologies have changed the way films are made?

Do you have any advanced media or film studies education?

Have you ever worked in film, video production or the creative industries?

How many times have you read Tolkien's novel *The Hobbit* and or *The Lord of the Rings* trilogy?

How many times have you watched the films *The Lord of the Rings* trilogy??

If you consider yourself a fan of Tolkien, do you think this existing relationship may have affected your engagement with *The Hobbit* If so, How?