Realising Middle-earth: production design and film technology

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Miniatures, bigatures, digital mattes, 3D animation, costume, set and prop design, forced perspective, location and studio shoots all contributed to the creation of Middle-earth. The panoply of visual effects LOTR uses to build Middle-earth’s image has become familiar, not just from the films but also from television specials, websites, DVD appendices and commentaries, and the remarkable travelling Exhibition. Armour, prosthetics, stunt and miniature doubles, animal wranglers, blue screen, and the Massive intelligent agents are part of our language now. Weta Workshop and Weta Digital, with their army of collaborators did more than visualise the most-read – and most-imagined – book of the twentieth century. They realised the script, made real the fictional world where the narrative would take place. The challenge of realisation is in some sense the challenge of cinema itself – the French even use the word réalisation to describe filmmaking. Realising Middle-earth is both a technical challenge and a special kind of problem in realism, the aesthetic field dealing with depictions of reality (as in documentary) and the illusion of reality (as in dramatic fiction). Most complicated of all is the realisation of a world whose highest technology, the explosive device in the culvert of the Deeping Wall, is portrayed as the work of Saruman’s dark arts. Tolkien’s hatred of industrialisation comes through in the firepits of Isengard. Yet the films depend on the use of and innovation in new media technologies, and much of our viewing pleasure comes from appreciating the craft that has gone into them. We watch entranced by a double magic: the fascination of illusion, and the fascination of how it has been achieved. The contest between the dark arts and white magic in the film is, among other things, a parable about the uses of technology, and it begins in the magic of illusion.

Few audiences can watch the films without sensing the immense effort that has gone into giving viewers the illusion of Middle-earth’s reality. From Viggo Mortensen’s repairs to his costume to the artificial ageing of sets and props, the filmmakers have been at pains to render the world of Middle-earth as if it possessed a history as well as a geography. Actors and the dialogue tell us of the older days, but also and crucially the production design emphasises the used, the rusted, the cracked, and the windblown. Perhaps nothing shows this more than the depth of the film: the detail of the design work, the staging of scenes in depth, and the use of deep focus. The ‘reality’ of Middle-earth in the film trilogy is an effect, like magic, perhaps the most special of all the special effects the films deploy.

Kracauer, a pioneer of realist criticism, once wrote, ‘The small random moments which concern things common to you and me and the rest of mankind can indeed be said to constitute the dimension of everyday life’ (1960: 304). Such fragments of reality are for Kracauer the most important elements of film, enabling us to experience as if for the first time the rich detail of life that, through habit or culture, we have learned to ignore. The critical term here is ‘random’. Because it is an automatic machine for gathering images, the camera will seize even on things its operator is unaware of filming. Though location shoots are notoriously fickle, snowing when you want sun, raining when you want snow, they also give the filmmaker
those unrepeatable fragments of actuality that are clouds, riverscapes, the flicker of leaves in the breeze, or sunset on a mountain range. Cinematography grasps those sensations with a scientific and democratic lack of choice. Bazin, Kracauer’s near contemporary, moved from the randomness of locations to a passion for deep focus, the use of wide-angle lenses, and light to allow all elements of a shot to appear in focus. These techniques gave audiences the freedom to look wherever in the frame they wish. Yet in ‘An Aesthetic of Reality’ he admits that ‘realism in art can only be achieved one way – through artifice’ (1971: 26). The problem, he notes, is that the illusion soon replaces reality itself, and mere technique replaces the redemption of the real. That is one of the commonest criticisms of LOTR, and it is the nub of the dialectic between natural and technological that governs technologies and design processes in the films.

Clearly the LOTR films are not realist in any useful sense of the word. Yet real things play a significant part in the movies’ reality effect. A key difference between sets and locations is that locations, however prepared for shooting, always have some residual reality in the sense that they cannot be entirely planned. Randomness is a hallmark of reality, in the cinema as in life: Eowyn’s hair flying round her face in the wind is both emotionally and pictorially convincing because it is random. Replicating randomness is a critical advance in CGI, as a comparison of the invading forces at Helm’s Deep with the robot army of Star Wars Episode One: The Phantom Menace shows at a glance. Because randomness is a mathematical concept, it can be programmed. But CGI tends to be very clean: everything in perfect focus, surfaces pristine. Noise and dirt need to be added, for example, by using digital fog (software that dims ‘distant’ objects and shifts them towards the blue end of the spectrum) and adding motion blur to replicate human and cine-camera optics. Likewise, virtual objects created in 3D software can be wrapped in textures derived from photographs of actual textiles, skin, and rocks. In the case of sets and bigatures, mouldings from pohutukawa bark and boulders give fine grain to Treebeard and the cave at the Pool. Real grasses and sedges were planted all over the Dead Marshes, real leaves and branches in the Fangorn set. It is not so much the authenticity of the set dressing that counts as the random untidiness of natural objects, a randomness that also adds depth to the most successful synthespian to date, Gollum, orchestrated on Serkis’s performance but also on the tripping, splashing, and tumbling that a real actor suffers, and that a wholly scripted CGI effect would lack.

To clarify some of these points, it is instructive to compare a couple of scenes, the first dominated by location and a set built on location, the other largely shaped by compositing bigatures and CGI. ‘The King of the Golden Hall’ (Towers extended DVD, disc 1, episode 20) brings us to the Edoras set. Running for 11 minutes and 6 seconds with a total of 206 shots, the average shot length (ASL) of just over 3.2 seconds is slightly misleading. At least four shots (Gandalf, Aragorn, Gimli, and Legolas riding over the plains of Rohan; Eowyn walking onto the look-out point outside the Golden Hall; the 17-second helicopter shot of the Edoras location; and Theoden’s transformation scene) run well over ten seconds each, and several are reprised after embedded shots, indicating that the sheer length of the takes was not a technical problem. The ASL is so short because the scene is punctuated by two intensely edited sequences, the three heroes fighting their way to Theoden’s throne, and the battle of wills between Gandalf and Theoden/Saruman. Absent these flurries of activity, the ASL settles somewhere above 4 seconds. External scenes are shot in natural light, and internal ones add a blue filter to give the impression of daylight as the Great Hall’s main illumination.

By contrast, ‘The Flooding of Isengard’ (Towers extended DVD, disc 2, episode 59) runs a far brisker 2 minutes and 21 seconds, with 40 shots and an ASL of 3.5 seconds. Here the cutting is far more regular, with no shots running over five seconds. The rule so flamboyantly broken in the first film, that miniature shots should always be as brief as possible, is here more rigorously employed. Though there is a great deal
of detail — tiny figures run across the top of the dam as the Ents tear it down, for example — none of it is dwelt on. The rhythms are subordinated to the rising crescendo of the film’s last act, and the use of effects proliferates as the faster cutting predominates.

The Golden Hall sequence is marked by the detail of costumes, armoury, textiles, and architecture, all built at full scale. Though some of these elaborate props are merely glimpsed, the attraction of deep staging is both that it provides a sense of the depth of the story world, adding to its illusion of reality, and that it invites audiences to multiple viewings, a vital attractor for success in the DVD sell-through market. ‘The Flooding of Isengard’, by contrast, is dominated by bigatures, miniatures, animatronics, CGI figures, and the compositing of live action into multi-layered shots (for example, the image of Saruman peering from his window on to the chaos below). At the same time, both sequences share some aesthetic techniques. Dialogue in close-up is largely done with shallow focus, though rarely as shallow as that used for the romantic pick-ups set in Rivendell. Elsewhere, deep focus is the rule. In both sequences, despite the difficulties of matching the various plates in compositing, the camera is rarely static, from minor reframings to grand crane and helicopter passes. This constant reframing adds to the sense of the real by emulating, in a suitably stylised way, the movements of a documentary camera, which always follows its subjects.

It is interesting to note that the predominance of live action or location rather than its exclusivity seems to regulate the duration of shots. The wide shot of Edoras that begins the Golden Hall sequence has extensive digital 3D additions to the location build, and Lesnie notes on the DVD commentary that Gandalf’s nose prosthetic needed frequent touch-ups in the digital grading process. None the less, these segments, where the wind tousles hair and beards or rips a banner from a flagpole, are touched with the randomness of the location, down to the wheat sprouting in the thatch as the four ride into the hilltop settlement, or the curling and twisting of smoke from the chimneys. Likewise Lesnie notes that the ambient daylight needed some supplement in the great hall of Edoras, and the film in general uses a great deal of fills, spots, and more effects-driven lighting tools such as ‘practical fire’ (piped gas flame used to illuminate interiors in this electricity-free world).

If, as Godard is supposed to have said, ‘morality is a question of tracking shots’, this is a highly moral film. Hand-held shots like those of Wormtongue’s ejection from Meduseld, crane and helicopter shots, or the 360-degree swirl around Grima and Eowyn in Théodred’s chamber are the more obvious, but even in the more portrait-like sequences, such as that depicting Théoden drawing his sword again, there are minor but significant reframings in almost every shot, except those that, like Théoden’s transformation, require the camera to be locked off between takes of the different stages of the make-up. The use of 3D and bigatures makes similar mobility available in the Flooding of Isengard. The nine-metre dam model, supplemented with sixty tons of water in two shipping containers, and the one-sixth scale model that it floods allow the cameras an extraordinary freedom, with rare exceptions like the composite shot of Saruman at his window looking across the CGI compound, with its population of moving figures, to the cataract plunging into his domain. A slightly earlier shot of a very similar composite includes a pan up the side of the tower model to find Saruman, while also keeping the compound and the mountainside in frame and in focus, though without the additional problem of rendering digital water to hide the worst artefacts of scale, especially difficult to manage in the case of water. The busyness of the scene is echoed by the camera’s constant movement, with the implication that the world of Middle-earth is never bounded by the frame and that, were the camera to swivel on its axis, we would see still more of it.

Ironically, the techniques of deep focus and the long take have become hallmarks of special effects cinema, where a new contradiction has arisen. Speaking of compositied actual and virtual camera movements
– for example the swirling image of the gladiators in the Coliseum in Gladiator – Allen notes that ‘they both confirm the spatial reality of the scenes in which they appear and simultaneously announce their amazing presence as illusion. This tension between the real and the illusory lies at the heart of the impact computer-generated images can have for their spectators’ (2002: 114). Pierson’s careful periodisation of digital effects in cinema suggests that special effects became increasingly embedded, and therefore less obviously wonderful, with films such as James Cameron’s Titanic (see Pierson 2002). But with LOTR we are back in the tension described by Allen, the continuation, by other means, of the dialectic first analysed by Bazin between the technical redemption of reality and the triumph of technique. As if to emphasise the struggle, our most ‘human’ characters (the hobbits, elves, and men, Gimli, Aragorn, and Gandalf) do battle with the most fantastic (the Balrog, the Ringwraiths, Sauron), even though their victory will bring about the end of magic and the rule of men – or, we might say, the end of special effects and the beginning of realism.

And yet, to swing back to the other side of the dialectic, we have come to see the special effects, and once they are over, so is the film. The purpose of the design work is not entirely to tell the story but to establish the credibility of Middle-earth. Credibility demands detail, the multiplying of layer upon layer of simultaneous actions and objects in the majority of shots, and the detail of hero costumes, arms, hair, prosthetics, and jewellery in close-ups. For those details to be significant, we need some kind of orientation, both the kind offered by the map and the kind given by the type of contradictory establishing shot described by Allen. Writing in a much earlier period of cinema, Balázs observed of the ‘panorama’ shot (now usually abbreviated to ‘pan’) that it ‘makes the camera move so that in gliding past the objects it takes pictures of them in the same order as that in which they are aligned in reality’. As a result, ‘space is not merely the place in which people and things can be shown; it achieves a reality of its own and has its own significance, independently of the objects which fill it’ (1952: 139, 141). This space expands that discovered by Bazin to include both time and subjectivity: ‘our time-sense measures the real distance which lies between the various objects’, with the additional possibility of depicting ‘in one and the same shot a man moving in space and the space this man sees out of his own eyes’ (Balázs 1952: 140). The elaborate dolly, track, crane, and helicopter shots of LOTR, including swooping sequences through and over miniatures and composite images, variously establish the world of Middle-earth as a discrete whole, and give us, for example in Gandalf’s fall through Moria at the beginning of Towers and Frodo’s vertigo at the foot of the stairs to Shelob’s lair, an entirely subjective view of it, Middle-earth as a space that can be inhabited viscerally. So, for example, the slow tracking shots that follow Gollum, Sam, and Frodo across the Dead Marshes establish the temporal dimensions of this world, the days of walking, the hours of climbing. Middle-earth’s tracking shots evoke both duration and extension to give it a physical presence that approximates what we would expect of a real geography. Unlike film, reality contains infinite detail. The first-time theatrical viewer’s strong sense of having missed much of the detail suggests an evolving definition of realism: If reality is what exceeds perception, the realist film must constantly evoke an infinity of detail that a close-up or a wider pan would reveal.

The Exhibition’s success touring panels on the production materials demonstrates some of this fascination with grasping a ‘reality’ that is essentially ungraspable, the desire for Middle-earth to exist, even though we know it does not and could, perhaps should, not. The detail of design serves many purposes, not least to do visually what the languages do in the book, demarcating each culture, building that series of homes – Meduseld, Hobbiton, Gondor, Rivendell – that tugs on the characters, what they defend, what they long for. There is immense daring here – as in the huge fly-through of the miniature for Saruman’s armoury – and the immense pride of artisans in a job well done. That pride too becomes part of our fascination – there is almost as much pleasure to be had from identifying with the crew as with the heroes of the quest.
The digital and craft guilds working in production have as perhaps their highest achievement a utopia of creative camaraderie which they offer as a model for the transformation of Aotearoa New Zealand from an agricultural to an information economy without traversing Saruman's industrialisation. This more than elvish magic articulates a potent, clean, green, digital economics with a fable about the dangers of technology. The power to make real, to defy destiny, and choose the world we want is acted out in the making of the films. We can only wait to see if that magic survives the departure of the elves.

References
