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The depth deception: Landscape, technology and the manipulation of Disney's multi- plane camera in *Snow White and the Seven Dwarfs* (1937)

Christopher Holliday and Chris Pallant

Across its animated feature films, the Walt Disney studio has developed a strong affinity with the narrative possibilities of the natural landscape as both an idyllic, tropical paradise and a darker, more malicious milieu. Beyond simply backdrops for the movements and actions of its animated characters, Disney's landscapes are often shifting and sentient in their storytelling functions, turning between antagonistic 'wild' spaces and more bucolic environments that provide seductive realms into which spectators are repeatedly drawn.¹ David Whitley argues that such is the repeating presence of 'wild nature' as holding 'central importance' to the studio's feature animation canon that Disney 'work[s] to sensitize the viewer to a particularized forest environment'.² Offering the creative opportunity for richly designed and visually lush backdrops, such landscapes have traditionally been exploited as a theatricalized setting where the studio can showcase the details of its pastoral graphic style and signature 'hyperrealist'

aesthetic. This chapter takes its cue from *Snow White and the Seven Dwarfs* (David Hand, 1937) as a Disney animated feature in which the spaces of the wood and the forest play a pivotal role, and examines how Disney's woodland environments as a site of narrative drama function as highly technological, *man-made* spaces. Within this broader industrial–technological narrative, *Snow White* remains particularly significant within the history of Disney feature animation, one that combined natural imagery with technological innovation to reorient the geography of the forest location as a testing ground for their proprietary animation techniques.

The lushness of *Snow White's* imposing wooded landscape was, most significantly, achieved through the patented multi-plane camera device, a high-rise structure that allowed a mounted camera to film vertically through a series of colourful backdrops. The spatial arrangement of the trees, branches, leaves and bushes allowed each layer to be painted onto separate background plates of the apparatus, thereby giving Disney animators 'new ways of investing space with meaning' and 'of balancing it against the lure of character'.³ The net effect was a threatening and haunted woodland of increased depth and dimension, through which the film could draw narrative distinctions within the forest as a place of shelter, sanctuary and sinister activity. By examining the production of *Snow White* and its construction of a forest environment, this chapter argues that Disney's landscapes are wholly rooted in animation's status as a highly industrial art form. With the wooded wilderness and luscious landscape of *Snow White* the product of combining cel-animation with revolutionary multi-plane camera techniques, the film crafts an imposing and visually unbridled woodland realm in ways that have reinforced the Disney studio's synonymous relationship with animated technology. Indeed, accompanying this aesthetic history of Disney's cel-animated features produced during the Classic Disney phase is a comparable tale of innovation that no less supports the studio's drive towards a natural articulation of animation in three dimensions. The development and promotion of the multi-plane camera as an industrial innovation provides, however, a highly gendered historical narrative of animated labour, one that overwhelmingly favours the creativity and contribution of men. Yet by considering the discourses that enveloped the arrival of the multi-plane camera into cel-animated feature-film production, this chapter identifies how the studio's female workforce played an important role in ensuring both the success of the multi-plane as a technology of animation and, by extension, the formation of Hollywood animation in its Golden Age.

Illusions of nature

If nature has always presented 'a conundrum in cultural logic' within the context of American national identity in its questioning of 'our role in

nature and nature's in our lives', then the trajectory of the Disney studio similarly asks how we might examine and reflect upon the many woods, woodlands and wildernesses that occupy the studio's animated feature films.⁴ From Bambi's woodland den and the undergrowth of *The Sword in the Stone* (Wolfgang Reitherman, 1963) to the Sherwood Forest setting of *Robin Hood* (Wolfgang Reitherman, 1973) and the 'ravishing landscape shots' of *Brother Bear* (Aaron Blaise and Robert Walker, 2003), Disney has continued to present nature as a multifaceted space of dramatic signification and negotiation.⁵ The natural world in the studio's feature films (both cel and now CG) often embodies a realm of chaos as much as it is depicted as a pastoral, lyrical paradise. Nature is both a competitor and an adversary, vulnerable but also a place of escape and adventure, and a luscious nirvana largely undisturbed by the imposing threat of humanity. Such landscapes provide protection and sanctuary in their guise as 'pristine' and 'serene glades' or, in the case of the dense African junglescapes of *Tarzan* (Kevin Lima and Chris Buck, 1999), a dynamic habitat that fully nurtures the physical exuberance of its feral protagonist.⁶ Whately is certainly not alone in identifying Disney's sustained engagement with 'the theme of wild nature', an affinity that grounded and bound up their storytelling preoccupations with fantasy and fairy tale together with natural creatures, forms and environments.⁷ For Douglas Brode, it was Walt Disney's own passion for nature, and his claims that 'we must make the effort to reintegrate ourselves into the natural world', which perhaps explains the filmmaker's investment in understanding and reimagining the natural world in animated media.⁸ As the dually daunting and reassuring woodland in the studio's feature-length debut *Snow White* makes clear, Disney – both the man and the studio – was immediately energized by nature as a motivating force, offering up a sublime and positivist vision of natural environments that were well-suited to communicating the machinations of what would come to be Disney's thematic and narrative formula.

The chaos and calmness of ecology in Disney represents a rhetorical commitment to the idea or very 'cultural logic' of nature in all its excess, lushness and detail.⁹ As a locus for such regular animated action, the natural environments that feature within numerous Disney animated films offer a space to think through what constitutes the natural, if not 'the feelings and the ideas that we bring to bear on our relationship with the natural world'.¹⁰ Disney feature animation frames nature as 'temporal, as existing not now, but in the past (the vanished wilderness) or the future (the restored wetland)'.¹¹ These are cartoons that ask questions about culture and conservation, the 'intrinsic ecological value' of unspoiled nature and the 'protection of natural resources for human use in a sustainable way'.¹² In Disney's hand-drawn natural landscapes and their emphasis on degrees of visual authenticity and believability, then, resides the potential to interrogate the historical shape, awe and beauty of 'nature' as a shifting set of values.

It was not just within Disney feature animation, but across other production arms of the studio, that the role and image of nature also became fully realized. A central element of Disney's emphatic relationship to the natural world that was solidified during the late 1930s and early 1940s was the studio's *True-Life Adventures* (1948–60). With titles that included *Nature's Half Acre* (James Algar, 1951) and *The Living Desert* (James Algar, 1953), the series comprised fourteen full-length educational documentary films that focused on specific elements of the natural environment. Alongside the Disney studio's theatrically released cel-animated films that popularized their own 'anthropomorphized depictions of nature', the particular rhetoric of the *True-Life Adventure* series 'served as the hegemonic template for virtually every natural history film made by Discovery, National Geographic and the BBC since'.¹³ This influence extended to the specific industrial structures of the Disney studio too. Indeed, the *True-Life Adventure* series would come to anticipate the independent 'Disneynature' film unit of the studio that was founded in April 2008 and which remains a division of the company charged with the production of nature documentaries. The first three titles produced under the Disneynature banner were *Earth* (Alistair Fothergill and Mark Linfeld, 2007) – a companion film to the BBC/Discovery series *Planet Earth* (2006) – as well as *African Cats* (Alistair Fothergill and Keith Scholey, 2011) and *Chimpanzee* (Alistair Fothergill and Mark Linfeld, 2012), and in their subject matter all recall the original *True-Life Adventure* series' focus on the scope and strangeness of the natural landscape.

It is clear, then, that Disney animation has been invested time and time again in the pleasures of nature and natural imagery, both in its feature-length animated cartoon canon and within ancillary multimedia products. That is not to say the studio's focus on the environment has not attracted degrees of criticism. In particular, the *True-Life Adventure* series – whose articulation of the natural world was loosely 'marketed as education media' – quickly became controversial on account of their 'inaccurate depictions and staged scenes'.¹⁴ Nicholas Sammond argues that the very structure of the series 'was as reassuringly invariable as nature itself'.¹⁵ Sammond points to the animated sequences that began each film, which helped to situate viewers 'firmly in the realm of natural history'. These devices formed part of a broader rhetoric of 'observation and revelation' that supported the narrative's investigation into the habits and habitats of the unpredictable natural world, largely with a child audience in mind.¹⁶ More recently, Disney's articulation of natural landscapes has drawn the attentions of contemporary eco-criticism and the emergent critical field of 'Enviro-toons'. In her survey of such environmental animation, Nicole Starosielski argues that in the late 1960s, 'environmental themes in animated film became explicitly and consciously aligned with mainstream environmentalist discourses, and environmental animation coalesced as an identifiable genre'.¹⁷ At the same time, such ecologically themed animation *can* be traced back to before this date by considering

Disney's ongoing engagement with the political positioning of nature and natural spaces. The interplay and exchange between nature and culture within films such as *Snow White* and *Bambi* (David Hand, 1942), as well as later Disney features *The Aristocats* (Wolfgang Reitherman, 1970), *The Rescuers* (Wolfgang Reitherman, John Lounsbery and Art Stevens, 1977) and *The Fox and the Hound* (Ted Berman, Richard Rich and Art Stevens, 1981), specifically 'valorize an "irrational" uncontrollable non-human nature as a space for both adventure and creativity'.¹⁸ The framing of Disney animation as types or modes of 'environmental cartoons' therefore involves the ideological interpretation of their sentimental romanticization (if not the design styles) of trees, moss, branches and leaves as allegories of wider cultural anxieties around the sanctity of natural space. This metaphorical treatment of Disney's animated landscapes serves to present their feature films as a form of environmental activism, which in turn invites a spectatorial awareness of the material contexts shaping the cultural construction of Disney's many animated landscapes.

There are several industrial reasons why woodland – with their concentration of vertical trees and branches, and horizontal spatial expanse – became the most common backdrop in Disney animation. A teleological perspective framing the representational agenda of the studio's animated features might see their preference for pastoral settings as a strategic choice made with long-term symbolism in mind: culture/technology; people/nature; built/organic; ordered and 'civilized'/wild and 'untamed'. Such ideological pairings have ultimately come to support precisely the kinds of contemporary environmental readings of Disney animation, and the shift towards eco-criticism, through which the studio's animated features are often examined. In their comparison between Disney's *Bambi* and *Mr. Bug Goes to Town* (Dave Fleischer, 1942) – the second cel-animated feature produced at the Fleischer Studios and co-directed by ex-Disney animator Shamus Culhane – Robin L. Murray and Joseph K. Heumann offer an ideological critique rooted in a nature-versus-modernity division. They argue that both *Bambi* and *Mr. Bug Goes to Town* effectively utilize organic landscapes to highlight both the independence and interdependency between nonhuman nature and the modern world 'that threatened stability'.¹⁹ Beyond such eco-critical interpretations, there are just as many – if not more – practical motivations for the repeated preference for wooded environments as a central visual component of Disney's animated narratives. Such motivations have their roots in the solidification by the Disney studio of animation as a commercial media practice in the 1930s. For example, the realm of the fairy tale appealed to Disney, in no small part, due to the lack of copyright restriction. A complexity of landscape was therefore needed to match the inventiveness of the subject matter. A backdrop of overlapping trees, leaves and woodland fauna brings other advantages over a built/urban setting, namely a softer detailing, with an emphasis on complementary colour tones

and shading rather than precise, modernist angularity, that constructs the illusion of depth and dimension. Consequently, the drawn or painterly woodland holds the ability to represent the universal nowhere: a space immediately recognizable as a wooded space, though one that is equally free from the specificity of drawn built/urban space. The natural landscape responds to the question of 'where is this story taking place' and instead offers a generic milieu within which Disney can tell its fantasy and fairy-tale stories.

On a practical level, it is also much easier to continually reuse a woodland background compared to a built/urban background, given the greater risk of viewers recognizing repeated buildings and becoming confused versus the acceptable uniformity of a treeline. Disney was not immune to reusing graphic material in this way, particularly during the 1960s and 1970s when it was both an 'artistic choice' and an economic cost-cutting imperative.²⁰ In the case of *Snow White*, many of its characters would reappear in ulterior guises in *Robin Hood* (a film largely comprised of recycled animation), while visual elements of *The Jungle Book* (Wolfgang Reitherman, 1967) and its forest environment were recycled in *Robin Hood*, and later for *The Rescuers*. *Bambi's* backdrops were similarly reused in *Alice in Wonderland* (Clyde Geronimi, Wilfred Jackson and Hamilton Luske, 1951) and *The Fox and Hound*. Disney animators traditionally 'painted backgrounds with tremendous attention to detail', with heightened levels of pictorial realism in both colour and perspective.²¹ Beyond any cost-cutting measure, the recycling of cel-animated environments therefore offered the forest as a repeating pleasure of graphic verisimilitude, which in turn has allowed spectators a return to painted environments that fully support the studio's narratives invested in intricate anthropomorphic ecosystems.

Into the woods

The convergence of these factors, related to aesthetic, economic, practical and symbolic choices, resulted in the treeline becoming a mainstay of Disney feature animation. In this way, the studio's natural hand-drawn landscapes not just mark the highest animated achievements of pristine illusionism but are often technological (and technologically contested) spaces, as their production often heralds moments of technological intervention where the Disney studio showcases its latest industrial innovation. In the case of *Snow White* and its luscious wooded environments, one agenda came to dominate the production of the film's natural backgrounds and setting: depth. Indeed, the introduction and development of the multi-plane camera facilitated the separation of multiple tree layers behind (and in front of) each other, thereby simultaneously introducing a visual depth

and greater opportunity to mix-and-match and repeat tree drawings on different planes. Developed in 1937 by US engineer William Garity and first pioneered in the short *The Old Mill* (Wilfred Jackson, 1937), the multi-plane camera reworked animated space against the cartoon's prior tableaux-style movement (influenced by comic strips and panels in the case of early cartoons), while offering new expressive possibilities for the cel-animated landscape. As Paul Wells explains,

Simply, four vertical struts were constructed to accommodate six panes of glass spaced at various intervals with the camera looking down from the top. The pane of glass closest to the camera would have foreground imagery placed or painted upon it, and each succeeding pane would have images in perspective until reaching the final pane, which would have the distant background. Each pane would effectively be a different 'plane' of action, and could move from side to side, and back and forth to facilitate the maximum degree of authentic movement through space.²²

While a number of individuals had developed earlier methods of achieving this kind of animation depth effect – including Lotte Reiniger's multi-plane set-up of the mid-1920s, Ub Iwerks' horizontal multi-plane camera built from old Chevrolet car parts and the 'setback' horizontal rig patented (US 2,054,414) by Max Fleischer in 1936 that could combine stop motion and cel animation – the multi-plane camera patented by Garity (US 2,198,006, awarded 1940), on behalf of the Disney Studio, represented a significant advancement with regard to the type of realism that Walt coveted at that time.²³ The multi-plane was certainly a device that permitted the action of *Snow White* to move within (and through) the forest scenery, following characters as they travelled deeper and deeper into the cel-animated screen world.

Snow White's first shot, for example, recalls that of *The Old Mill* (which started production after *Snow White*, but was released a month earlier in November 1937) in negotiating the visual possibilities afforded by the multi-plane camera's movement in exhibiting advances in spatial realism. For Richard Schickel, *The Old Mill* 'has no real plot, and it consisted, not unnaturally, of a succession of tracking shots that showed the activities of the animal inhabitants of a deserted windmill'.²⁴ *Snow White* opens on a similar moment of bravura camerawork, as the spectator is taken closer via a tracking shot to the Queen's castle, here neatly framed by trees and foliage that are painted and arranged on alternate layers of the multi-plane. The sequence then dissolves into another (closer) image of the castle with the camera continuing its forward movement as it tracks through the space, before it dissolves again to take spectators inside where the Queen echoes the camera's movements by moving forward in her approach to the Magic Mirror. The effect is one of a fantasy of dimension, with space becoming a

graphic effect that demonstrates both the 'stylistic enhancements' afforded by the camera and also the film's organization of its animated environments for both 'narrative and thematic capital'.²⁵

The early technological evolution of hand-drawn animation, in the case of the multi-plane camera resulting in greater efficiency through the separation of layers, points to the 'technologized' identity of *Snow White*'s construction of its natural spaces in ways that reinforced the Disney studio's synonymous relationship with innovation.²⁶ Technology and technological culture immediately became central to the stability of animation as a viable commercial industry, and for many Disney scholars marks out the studio's primary contribution to the Golden Age of American cartoon tradition. Amy Foster argues that Disney himself embodied an excitement for the future (grounded in his wider interest in space travel), yet notes a 'contradictory fascination with the medieval era and his technological enthusiasm'.²⁷ This ideological ambivalence cleaves the fantasy of the studio's fairy-tale features from the medium used to create them, suggesting a possible tension between subject matter (past) and form (future). It also positions the popular Disney narrative of technological innovation within a framing discourse of nostalgia that underscores the studio's narrative formulae.

Snow White's formal exploitation of the multi-plane apparatus (not only in its opening sequence but also in the 'layered' shots that establish the pastoral location of the dwarfs' cottage) represents a more vexed and ambivalent experimentation with convincing three-dimensional landscapes. J. P. Telotte argues that the multi-plane device emerged at 'a kind of transitional point for Disney animation – a point at which its modernist impulses were so much tamed by a conventional realism as already seeming to be looking beyond'.²⁸ Within the context of *Snow White*, the impact of the multi-plane camera has certainly become a central component of the animated medium's 'realist' evolution and, alongside three-strip Technicolor, key to how Disney crafted imposing and visually unbridled realms in three dimensions.²⁹

The prosperity of 'Golden' periods within Disney's animated history is critically understood through discourses of industrial stability, which in turn foster artistic, creative growth and the (re)emergence of the regularized Disney formula. Disney's desire to innovate and harness technology certainly contributed to many of the formalizing principles of hyperrealism, and the classicism of the Disney aesthetic honed during the 1940s and 1950s period.³⁰ More recently, the post-1989 Disney 'Renaissance' era – credited among Disney scholars as the 'Second Golden Age' – as well as the studio's successful computer-animated feature films released post-2005 have again been represented through an interplay between industrial harmony and formal, formulaic stability. In the case of *Snow White*, the film has been likewise understood as part of a wider outcome of industrial and artistic coherence. Katie Croxton argues that *Snow White* 'solidified Disney as a skilled interpreter of the Grimms' works and its success propelled him

and the Walt Disney Studio into a popular culture staple'.³¹ As a studio too, Disney's work during the production of *Snow White* coincided with a progressively more stable set of working conditions. J. B. Kaufman's account of the production of the film argues not only that it 'played a decisive part in determining the studio's future direction' but also that its success partly corrected something of an 'unstable atmosphere' at Disney during the early 1930s when they were working to produce a feature-length version of Lewis Carroll's *Alice in Wonderland*.³² As the studio's landmark first feature, *Snow White* has therefore been conceptualized as a symptom of this growing industrial security. However, a closer look at the landscapes in *Snow White* and the application of the multi-plane camera reveals that the critical framing of three-dimensional natural environments as storytelling elements without metamorphic potential is not fully resolved by the film. Indeed, there are moments where the depiction of the wooded landscape appears to recall Disney's early cartoon history, seemingly operating outside certain hyperrealist levels of verisimilitude.

During the scene in which Snow White hurriedly escapes from the Woodsman and runs frantically deep into the woods, the camera follows her movements from right to left as she passes behind and in front of the trees. In this sequence, the organization of space in the multi-plane camera fully supports the narrative drama of the sequence. With the action obscured by branches that intrude into the spectators' field of vision, Snow White's escape from the Woodsman into the woods becomes visualized through the spatial realism and the character's movement back through clearly defined levels. However, once Snow White shifts direction as she runs, an ulterior visual style begins to emerge. The jagged edges of the trees mutate into recognizable 'arms' that check her movements, while floating wooden logs transform into crocodiles that snap ferociously to add further jeopardy to her plight. This sequence from *Snow White* suggests a more expressive play with landscape that belies the studio's hyperrealist agenda, showcasing the momentarily formal alignment between multi-plane aesthetics and a more metamorphic sensibility. *Snow White*'s wooded landscapes become lively landscapes that reflect moments of clear formal/stylistic experimentation, emblematic of a transitional film in which the metamorphic (or what Sergei Eisenstein would call 'plasmatic') charge of the *Silly Symphonies* and the emergent turn to the hyperreal forces coexist.³³ *Snow White* might therefore be considered as stylistically deciduous – shedding (though not completely) its prior states in the pursuit of pictorial realism. Telotte labels this negotiation between naturalism and modernity as a 'combinatory approach' (evoking, perhaps, Foster's description of Walt's own 'contradictory fascination').³⁴ Such an approach identifies how aesthetic values visible onscreen in the animated features themselves were equally matched by an industrial push–pull behind the scenes. The emergence of 'measuring dimension and producing parallax' leading to (and as a consequence of) the innovative development of the

multi-plane too suggests that, as with the non-human/human collisions in the themes and narratives of *Bambi* or even *Mr. Bug Goes to Town*, the tension of nature and modernity held in delicate balance played out artistically in *Snow White* as much as it did industrially.

‘Man is in the Forest!’

Whenever story director Perce Pearce would announce, ‘Man is in the forest!’ (a line from *Bambi* meaning ‘danger’) it meant Walt was down the hall.³⁵

Despite the studio’s involvement with technology as part of its evolution and expansion into a multimedia entertainment conglomerate, it is an element of animated feature-film production that is both made visible *and* consciously veiled. Telotte argues that ‘technological supports or developments’ are ‘often unseen’ and ‘unconsidered’ within the company’s synergistic strands that reach across film, television, theme parks and other ancillary income streams.³⁶ This is, in part, due to tensions between the industry of animation and its reception as an art, coupled with the central role of ‘magic’ within the wider cultural experience of Disney products. Telotte argues that a narrative of Disney’s industrial invention is wrought with conflict because ‘technological underpinnings’ are often hidden to create the illusion that characters and worlds are charmed and enchanted, thereby adding to the ‘magical atmosphere that Disney sells’.³⁷ Although these conclusions are drawn against the literal mechanics of Disney’s theme parks that seemingly ‘work by magic’, they equally apply to their animated features. This masking of technology suggests two competing contexts. First, it provides a broader corollary to animation as a creative medium whereby the industrial activity of its production occurs within moments that remain invisible to the spectator, and occluded from their view. As Norman McLaren defined it, ‘what happens between each frame is much more important than what exists on each frame’.³⁸ Animation is, for McLaren, ‘the art of manipulating the invisible interstices that lie between the frames’.³⁹ Second, however, is that the occlusion of labour incites a more gendered set of conditions that surround *Snow White*’s production and the terms of its workforce.

Allegedly uttered as a warning to Disney animators that their autocratic leader was an imminent arrival into the corridors of Disney’s headquarters in Burbank, California, ‘Man is in the forest!’ is a phrase that usefully stands for the ‘combinatory’ meeting of nature and culture in *Snow White*. It also playfully gestures to the impact of a ‘foreign’ technological presence that permitted the studio’s teleological shift towards depth and dimension. Yet however apocryphal its origins, the phrase also raises to a higher pitch of emphasis the issue of gender and the historical relegation of women’s labour

to the margins of the multi-plane narrative. Indeed, Disney has struggled to shake the impression of being something of an old boys' club, though this is a concern that the studio is belatedly seeking to address, perhaps most effectively through the promotion of Jennifer Lee to the role of Chief Creative Officer of Walt Disney Animation Studios, following the acrimonious departure of the previous Chief Creative Officer John Lasseter. Lee's appointment is far from tokenistic, and the co-director (with Chris Buck) of *Frozen* (2013) and *Frozen 2* (2019) has already signalled her intent to promote gender equality through her decision to strategically partner Disney with the United Nations Foundation's 'Girl Up' programme. During Walt Disney's stewardship, however, the studio repeatedly failed to convey a sense of gender equality in the workplace, whether through masculine promotional photographs; through the public championing of his 'Nine Old Men' as the key creative individuals responsible for driving the studio's animation; or through the words chosen for recruitment adverts, such as the one posted in the April 1936 issue of *Popular Mechanics*: 'Walt Disney WANTS ARTISTS[.] Walt Disney, creator of Mickey Mouse and Silly Symphonies offers exceptional opportunities to trained male artists. Write for particulars, giving age and occupation.' However, nowhere is the issue of gender and its imbalance more visible than in the discourses that enveloped the implementation of the multi-plane camera into cel-animated feature-film production.

Reviewing the staged, promotional photographs and footage of the multi-plane in operation, presented in the 'Tricks of Our Trade' (13 February 1957) episode of *Walt Disney's Disneyland*, we encounter a conspicuously male workspace. This multi-plane sequence in 'Tricks of Our Trade' begins with Walt Disney presenting the viewer with a framed blueprint containing eight drawings showing various aspects of the multi-plane camera. These drawings do not correspond with the drawings contained in Garity's 1938 patent application, nor does Disney reference Garity's contributions at any point in this sequence. However, given that 'Tricks of Our Trade' broadcast on television with a mixed-age audience, airing almost twenty years after the submission of Garity's patent, Disney's simplified account of the multi-plane's origin, stating that 'it came out of school of self-improvement here at the studio', makes sense. Disney, with the help of cutaways to a camera operator recording a Mickey Mouse sequence with a regular rostrum camera set-up, and subsequent cutaways to the animated Mickey Mouse sequence (demonstrating depth illusions pre-multi-plane), articulates the challenge of believably animating not just the illusion of depth, but also dynamic perspective. After the Mickey Mouse sequence, Disney then describes a scene whereby the camera tracks down a country lane at night, noting how the moon increases in size at the same rate as the farmhouse on the horizon and the fields in the foreground: 'the problem was: how to take a painting and make it behave like a real piece of scenery under the camera?'. The solution was the multi-plane and, for the first five minutes of

this 'Tricks of Our Trade' feature, Disney follows closely the problems and solutions articulated by Garity in his 1940 patent without actually naming the engineer who left the studio in 1942.

The final few minutes of the multi-plane feature are focussed on the camera in operation, using the opening sequence from *Bambi* as a case study, with Disney introducing this by saying 'here we see the multi-plane camera crew preparing to shoot that scene'. The following dialogue is heard in this sequence:

Dick [Borden]
Camera Operator
Everything's OK except the bottom level. What's wrong down there, Alan?

Alan
Crank Operator
I was moving it the wrong way, Dick, I'm taking it back now. How's that?

Dick
Camera Operator
Looks fine now. Ok, we've got that frame, let's get set for the second exposure.⁴⁰

This is a staged sequence, as many of the 'behind-the-scenes' features for Disney's television venture were, and it is clear from many of the promotional photographs that were taken in more authentic production contexts that the camera crew were typically required to wear plain white overalls.

While Disney promoted an exaggeratedly male vision of the multi-plane's operation, there is conflicting photographic evidence that suggests women also had an important role in the successful recording of multi-plane sequences. In Mindy Johnson's book, *Ink & Paint: The Women of Walt Disney's Animation* (2017), we find an image depicting several women working alongside several men in the multi-plane room. Johnson's caption notes: 'Inkers and Painters touch up cels for the multiplane camera while in production, circa late 1930s.'⁴¹ The involvement of the Ink and Paint team here, around the time of *Snow White's* production, was, perhaps, to correct or add colour, or perhaps to fix a cel to compensate for the carelessness of one of the men tasked with loading or cranking. Perhaps it was even to exaggerate a colour to compensate for the inability of the camera to adequately record the colour of a cel positioned at a lower order in the stack. What is clear is that these women – an exclusively female 'support' team – did play an important role in ensuring the success of the multi-plane camera.

Sadly, this reality is not often captured in accounts of the multi-plane's operation, both from within and outside the studio. Disney's own views on why women had not been able to make the transition from the Ink and Paint

department to other divisions of his studio are certainly a key factor for this lack of visibility. Quoted in a 1946 column written by Bob Thomas from the Freeport, Illinois' *The Journal Standard*, Disney remarks: 'I have found that very few women are good cartoonists ... There have been many good women artists, but cartooning by women is inevitably too fine and dainty.'⁴² Thomas then attempts to offer some balance:

Disney cited one or two exceptions to his contention that women can't cartoon. He also declared that he employs many women, but as artists. 'As artists, they often have a better knowledge of color than men, he said.' 'Another thing,' he added, 'too often we have put a girl through our long and expensive training, only to have her marry and retire. She lets her husband earn the money, whereas a male cartoonist has to stay at his job.'

If we look beyond the casual misogyny, Disney is failing to recognize his own professional prejudice, whereby he has predestined any female Disney employee's creative potential. His remarks are ultimately a key reason why women could often feel disadvantaged working under his stewardship and, as a consequence, end up becoming disillusioned by their career prospects and leaving the studio earlier than they might have previously anticipated.

Disney is not alone in speaking the language of patriarchy. Richard Schickel's *The Disney Version: The Life, Times, Art and Commerce of Walt Disney* adopts an equally uncritical register when describing the scaling up of Disney's studio during the production of *Snow White*:

Unlike most growing industrial enterprises, the largest number of new employees were not in executive or administrative work, but were, instead, animators, assistant animators, breakdown *men*, and in-betweeners (the last being the traditional starting point for a young *man* learning the art, and whose work, logically enough, consisted of doing the drawings that come 'in-between' the drawings of the main action. Executed by the *men* above *him* on the ladder). There is no doubt that the animators were the glamorous figures of the infant industry, the *men* who drew the best salaries (\$150 to \$200 a week) and among whom were a few who came to work wearing polo clothes, ready to ride with the boss at the end of the day.⁴³

While Schickel is undoubtedly seeking to reflect the professional world that his research revealed, he actively upholds the patriarchal register favoured by Disney, excluding at the time of his writing the work undertaken by at least two generations of women at the Disney studio working in the Ink and Paint division.

The work that has followed on Disney has done much to probe the wider technological picture surrounding the evolution of their multi-plane technology, as well as considering the aesthetic implications of Disney's pursuit of multi-plane realism.⁴⁴ Yet has it done enough to adequately reshape the historical record? By focussing on the headline figures, such as Walt Disney, Ub Iwerks, Max Fleischer and William Garity, these otherwise useful contributions allow the received (masculine) characterization of the multi-plane's operation to go unchallenged. The promotion of the multi-plane workspace as a strongly *male* workspace is emblematic of the wider marginalization of the female workforce during Disney's lifetime, a workforce that helped contribute greatly to Disney's success across its animated features. Thankfully, more work is now being done to reclaim and represent the personal, professional and industrial histories of women in animation, both at the Disney studio and beyond.

Conclusion

The forest that pervades *Snow White* and envelops its characters is anything but an inanimate backdrop. Against the flattened action and movements of earlier animated cartoons, the spectacle of 'realistic' spatial organization in *Snow White* afforded by the emergent multi-plane technology crafts persuasive depth cues and convincing perspective that illuminates the film's moments of narrative drama. Its arrangement of foreground to background space can be understood historically and formally as central to the studio's pursuit of graphic illusionism and the rapid hardening of its influential 'hyperrealist' principles. It also functions as a highly 'technologized' place in which spectators can encounter sanctuary, solitude and shadowy threat, while encouraging them to reflect upon their own curated relationship with nature in the modern world. These trees, in their static movement – being simultaneously painted on cels and frozen on celluloid, but subject to the roaming demands of the multi-plane camera – draw attention to the mechanical and technological ambition of *Snow White*. However, these trees, through their muted, yet precise, colours, also point tantalizingly at a history of the studio yet to be fully reclaimed: the work of Disney's women employees during Disney's 'Golden Era', which, as this chapter has argued, requires even greater depth and dimension.

Notes

- 1 For an extended discussion of environments as active ingredients within the animated realm, see Chris Pallant's *Animated Landscapes: History, Form, and Function* (New York: Bloomsbury, 2015).

- 2 David Whitley, *The Idea of Nature in Disney Animation: From Snow White to WALL-E* (Hampshire: Ashgate, 2008), 1, 6.
- 3 J. P. Telotte, *Animating Space: From Mickey to WALL-E* (Lexington: University Press of Kentucky, 2010), 139.
- 4 Margaret J. King, 'The Audience in the Wilderness: The Disney Nature Films', *Journal of Popular Film and Television* 24 (1996): 60 (60–8).
- 5 Whitley, *The Idea of Nature in Disney Animation*, 94.
- 6 Katherine Coyne Kelly, 'Disney's Medievalized Ecologies in *Snow White and the Seven Dwarfs* and *Sleeping Beauty*', in *The Disney Middle Ages: A Fairy-Tale and Fantasy Past*, ed. Tison Pugh and Susan Aronstein (London: Palgrave Macmillan, 2012), 191 (189–207).
- 7 Whitley, *The Idea of Nature in Disney Animation*, 1.
- 8 Douglas Brode, *From Walt to Woodstock: How Disney Created the Counterculture* (Austin: University of Texas Press, 2004), 140.
- 9 King, 'The Audience in the Wilderness', 60.
- 10 Whitley, *The Idea of Nature in Disney Animation*, 1.
- 11 Kelly, 'Disney's Medievalized Ecologies in *Snow White and the Seven Dwarfs* and *Sleeping Beauty*', 191.
- 12 Ibid., 194.
- 13 Jennifer A. Sandlin and Julie C. Garlen, 'Introduction: Feeling Disney, Buying Disney, Being Disney', *Disney, Culture, and Curriculum*, ed. Jennifer A. Sandlin and Julie C. Garlen (London: Routledge, 2016), 11; Ronald B. Tobias, *Film and the American Moral Vision of Nature: Theodore Roosevelt to Walt Disney* (Michigan: Michigan State University Press, 2011), xix.
- 14 Sandlin and Garlen, 'Introduction', 11.
- 15 Nicholas Sammond, *Babes in Tomorrowland: Walt Disney and the Making of the American Child, 1930–1960* (Durham: Duke University Press, 2005), 202.
- 16 Ibid.
- 17 Nicole Starosielski, "'Movements That Are Drawn': A History of Environmental Animation from *The Lorax* to *FernGully* to *Avatar*", *International Communication Gazette* 73, nos 1–2 (2011): 152 (145–63).
- 18 Robin L. Murray and Joseph K. Heumann, *That's All Folks?: Ecocritical Readings of American Animated Features* (Lincoln: University of Nebraska Press, 2011), 141.
- 19 Ibid., 42–3.
- 20 Chris Pallant, *Demystifying Disney: A History of Disney Feature Animation* (New York: Continuum Books, 2011), 12.
- 21 Newton Lee and Krystina Madej, *Disney Stories: Getting to Digital* (New York: Springer, 2012), 59.
- 22 Paul Wells, *Animation: Genre and Authorship* (London: Wallflower Press, 2002), 9.

- 23 Katharina Boeckenhoff and Caroline Ruddell, 'Lotte Reiniger: The Crafty Animator and Cultural Value', in *The Crafty Animator: Handmade, Craft-Based Animation and Cultural Value*, ed. Caroline Ruddell and Paul Ward (London: Palgrave Macmillan, 2019), 85 (75–98); and J. P. Telotte, 'Ub Iwerks' (Multi)Plain Cinema', *animation: an interdisciplinary journal* 1, no. 1 (July 2006): 16 (9–24).
- 24 Richard Schickel quoted in J. P. Telotte, *The Mouse Machine: Disney and Technology* (Urbana: University of Illinois Press, 2008), 65.
- 25 Telotte, *The Mouse Machine*, 65.
- 26 Contemporary reviews of *Snow White* make conspicuous reference to Disney's technological sophistication, in particular the studio's ability to create the illusion of depth. See John C. Finn's review of the film for *Variety* (28 December 1937) and Kate Cameron's review for *New York Daily News* (14 January 1938).
- 27 Amy Foster, 'Futuristic Medievalisms and the U.S. Space Program in Disney's *Man in Space* Trilogy and *Unidentified Flying Oddball*', in *The Disney Middle Ages: A Fairy-Tale and Fantasy Past*, ed. Tison Pugh and Susan Aronstein (New York: Palgrave, 2012), 154 (153–70).
- 28 Telotte, *Animating Space*, 139.
- 29 For a discussion of Disney and colour, see Natalie M. Kalmus, 'Color Consciousness', *Journal of the Society of Motion Picture Engineers* 25 (August 1935): 139–47; Telotte, *The Mouse Machine*, 42–55 [chapter 2 – Minor Hazards: Disney and the Color Adventure].
- 30 See Pallant, *Demystifying Disney*, 35–53.
- 31 Katie Croxton, 'Snow White, the Grimm Brothers and the Studio the Dwarfs Built', in *Walt Disney, from Reader to Storyteller: Essays on the Literary Inspirations*, ed. Kathy Merlock Jackson and Mark I. West (Jefferson, NC: McFarland, 2015), 29 (21–30).
- 32 J. B. Kaufman, 'Before Snow White', *Film History* 5, no. 2 (June 1993): 172; 160 (158–75).
- 33 Sergei Eisenstein, *Eisenstein on Disney* (trans. Jay Leyda, London: Methuen, 1988).
- 34 Telotte, *Animating Space*, 139.
- 35 Disney animator Marc Davis quoted in John Canemaker, *Walt Disney's Nine Old Men and the Art of Animation* (New York: Disney Editions, 2001), 275.
- 36 Telotte, *The Mouse Machine*, 2.
- 37 Ibid.
- 38 Norman McLaren quoted in Charles Solomon, *The Art of the Animated Image: An Anthology* (Los Angeles: AFI, 1987), 11.
- 39 Ibid.
- 40 <https://www.youtube.com/watch?v=YdHTIUGN1zw>.
- 41 Mindy Johnson, *Ink & Paint: The Women of Walt Disney's Animation* (Glendale: Disney Editions, 2017), 130–1.

- 42 <https://www.newspapers.com/newspage/3995083/>.
- 43 Richard Schickel, *The Disney Version: The Life, Times, Art and Commerce of Walt Disney* (New York: Simon & Schuster, 1968), 171; italics added for emphasis.
- 44 See Michael Barrier, *Hollywood Cartoons: American Animation in Its Golden Age* (Oxford: Oxford University Press, 1999), Telotte (2008) and Pallant (2011).