

From animation to *anime*: drawing movements and moving drawings

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Abstract: This essay deals with two kinds of movement common in cel animation: ‘drawing movements’ and ‘moving drawings’. Drawing movements is common in traditional cel animation that strives for full animation. The latter – moving drawings – becomes pronounced in techniques of limited animation, common in *anime*. The goal is not, however, to identify and consolidate differences between animation and *anime*. On the contrary, this paper explores how drawing movements entails a decoding of live-action cinema, which is intensified in the techniques of moving drawings that are prevalent in *anime*. Thus, *anime* is seen as a part of movement away from one kind of cinematic experience, towards something like new media and information. The goal of the essay is to think across media, to explore the ways in which different movements have an impact on narrative, genre and spectatorship. Miyazaki Hayao’s *Tenkū no shiro Raputa* (Castle in the sky) (Studio Ghibli, 1986) provides a site for analysis of the ways in which *anime* technique generates and exploits potentials such as flatness, jitter and weightlessness. Miyazaki’s emphasis on floating and gliding presents one way to deal with ‘*anime-ic*’ potentials – one that has definite consequences for the imagination of gender, history and nature, as well as the *anime-ic* experience of information.

Keywords: animation, *anime*, limited animation, new media, gender, Miyazaki Hayao

Introduction

As the express train to Narita airport goes through a tunnel, it passes a series of figures – actually, a series of images of a human figure in different positions, silhouettes sketched with neon lights – which the speed of the train serves to blur together and thus to ‘animate’. The travelling viewer sees an animated figure moving on the dark wall of the tunnel. This ‘animation by train’ works much like the frames of a film, only here it is the movement of the viewer through a tunnel, rather than that of celluloid through a projector, that transforms a series of static images into a moving, animated figure.

This scenario calls to mind two kinds of movement common in cel animation – drawing movements and moving drawings. Traditionally, in cel animation, outline drawings are traced in fine ink on a thin, transparent sheet of celluloid, a ‘cel’. The outline drawings are meticulously coloured in, resulting in an opaque coloured shape on the transparent cel. One kind of movement is created by photographing a series of sketched and painted images (a figure or figures). Then, projecting the series serves to animate the figure or figures. It is a matter of drawing movements. This is what one usually thinks of as the art of animation.

It is also possible to move the drawings. For, at the same time that cels are prepared, backgrounds are designed and painted. The cel can be pulled across the background in various directions, or the background pulled under the cel. Similar effects can be created on a more elaborate scale: cels can be placed in slots to create a scene with multiple layers or planes, in which case camera movements can produce a sense of relative motion between layers. Such techniques enable another kind of movement, one that might be dubbed ‘moving the drawings’. It results in an ‘induced movement’, that is, an effect of relative movement. It is like that which arises when you feel that the platform not the train moves as your train leaves the station. Or, as two trains pass, one train seems to stand still. In the instance of the animation-by-train scenario, as the figure comes to life, the spectator’s position temporarily seems to stand still. Induced movement brings into play a complex set of mobile relations between foreground, background and spectator.

This article begins with the other kind of movement, one usually associated with animated films – drawing movements. It subsequently turns to the complex mobile relations that arise from ‘moving drawings.’ This latter technique – moving drawings – becomes quite pronounced in many Japanese animated films, commonly referred to as *anime*. In this respect, the distinction between drawing movements and moving drawings enables a consideration of differences between animation and *anime*. Yet the goal is not to identify and consolidate differences between animation and *anime*. Rather, it is to attempt to think between media, in order to explore the ways in which different approaches to movement have a great impact on narrative, genre and spectatorship.

Drawing movements

In cel animation, when one draws movement, it is a matter of drawing and painting images of a figure that are photographed and run through a projector – images of a human, an animal or even inanimate objects. Drawing movement is thus a composing of movement. Or maybe it should be called a recomposing of movement, insofar as the movements of the figure are first decomposed, so to speak. The artist breaks down the figure’s movement into a series of discrete images, which are drawn or painted sequentially, and then the speed of projection recomposes the movement.

The movie camera sets the shutter at a fixed interval in order to record movement by parsing or decomposing it into images snapped at equal intervals. If the animator is to produce fluid, seamless movements like those in cinema, she must think and work like a movie camera. Matsumoto Reiji, for instance, speaks of a time during the war when he constantly watched films of Mickey Mouse and Popeye at home: 'And since they were 35 mm film, I could see the film and understand how animation works, how each frame was slightly different from the others in sequence. . . . By the age of five or six, I was already familiar with the mechanism of animation' (1997: 150).

Animation artists take on the task of the shutter, drawing a figure in various stages of motion, at relatively equal intervals. They replicate the camera's way of decomposing 'live action' but with sketches rather than snapshots. Now, as everyone knows from playing with 'flip' or 'flicker' books, if the motion is not broken into equal intervals, the resultant movement when you flick through the pages is rather awkward and jerky. To avoid jerkiness, the Disney standard, for instance, demanded that the artist draw approximately twelve frames per second. This means that, at projection rate of twenty-four frames per second, one drawing appears over two, maybe three frames – fast enough to fool the eye into seeing cinema-like movement, unbroken and fluid.

To achieve fluid movements, it is not uncommon for animators to base their drawings on film clips. There is, for instance, 'rotoscoping' in which the artist redraws a film clip frame by frame. In some instances of rotoscoping, the animator simply turns to film sequences that are already available, and reworks them. In other instances, live-action sequences are filmed in order to produce a series of images to be duplicated by animation artists. This was the case with the first feature-length colour animated film produced in Japan after the war – *Hakujaden* (The story of the white serpent, 1958). Most of the film was shot with actors on sound stages, and the footage was then redrawn by animation artists (see Yamaguchi and Watanabe 1977: 64; Miyao this issue).

Nonetheless, even with the rotoscoping of live action, there are still differences between the live-action footage and animation. Because there are real differences between the intervals that the hand will draw and those a shutter will take, the animator's work is not really an exact replication of the camera's procedures. It is a recoding of them. Such differences are not merely differences in precision: it is not simply that cinematography based on photography is more accurate or real than painting or drawing. Animation presents qualities of movement that differ profoundly from live-action cinema. Conceptually, the notion of recoding provides a way to discuss different qualities of movement that potentially arise in different uses of filmic media – or even between media. Animated film is arguably multimedia or intermedia in that it traditionally utilizes drawing and photography and, more recently, digital colouring and computer-generated images.

Recoding is not the same thing as replicating, copying or reproducing. To say that animation recodes cinematic movement is not to say that animation is

imitative, derivative or secondary in relation to cinema. On the contrary, recoding is intended to show the responsiveness and expressiveness of animation. Nevertheless, for a variety of reasons, animation is often thought of as secondary, even inferior. First, there is the common wisdom that, if a film can be made in live action, then it should. Animation is then reserved for those scenarios impossible to realize in live-action cinema. Second, there is the ubiquity of cinema in the global marketplace, especially big-budget Hollywood action features. Not surprisingly then, producers of Japanese animation or *anime* show a keen awareness of live-action cinema. Even a cursory glance at Japanese animated films is enough to make one aware of cinematic precedents and procedures. And, in their interviews, famous animators like Yoshiyuki Tomino or Miyazaki Hayao display a profound understanding of cinema. Given such global biases towards cinema over animation, it is not surprising to hear Yoshiyuki, renowned for his work as a director and writer, express bitterness that in Japan he could not afford to make live-action films but was constrained to animation (1993: 10).

On the one hand, the impression that animation is secondary or inferior to live-action cinema comes of economic and demographic concerns: cinema has larger audiences, adult audiences, and hence larger budgets. On the other hand, there is a sort of reality bias that comes with photography. There is a bias that photography-based cinema inherently has greater reality effect than the drawings used for animation. Cinema based on live-action photography can claim (and often does) that it merely records or represents actual, 'live' movements. Thus live-action cinema seems to occupy a privileged relation to movements and actions in the world – to which animation is supposed to defer.

This sense of cinema is rapidly changing. Cinema and photography's privileged relation to the world was (and is) often based on a sense that the process of photographic development – in which photons contact the emulsion and gradually effect a chemical transformation – afforded a contact with the sensible world and its movements. More recently, such sensible contact is seen to be undermined by the digital, broadly conceived as a medium for carrying information with no sensuous link or contact with the world. Lev Manovich, who deals at length with such issues in his work on new media, remarks, 'The pretense of modern media [cinema] to create simulations of sensible reality is similarly cancelled [by binary code]; media are reduced to their original condition as information carrier, nothing less, nothing more' (2001: 25). Analogously, Thomas Looser, in his article in this issue, deals with the problematic of analog versus digital in order to resituate Japanese animation. Indeed, the emergence of new media not only forces us to re-think what cinema is, but also promises new ways to think about something like *anime*.

Historically, cinema has had a reality edge on animation, due to the sense that it connects with the sensible world and its movement. And this still informs the sense of what animation is. In terms of studio production, differences between cinema and animation have been extended into, and stabilized in, different types

of characters and actions, genres and themes. The sense that cinema is in contact with movements in the real world even extends to different generic takes on reality itself. By convention, animation is deemed to be generically suited to other realities and other worlds: children's stories, science fiction and fantasy, and comedy, parody, burlesque. In cartoon comedy and burlesque especially, there is a tendency to cite or caricature characters from film and to restate, lampoon and disfigure the conventions of live-action cinema. This has traditionally provided a way to mock and overturn the perception that animation is secondary and derivative, as is stressed in the work of Paul Wells (1998).

There is, however, another way to look at animation and at *anime*, that of the recoding of movement. If I have evoked differences between cinema and animation, it is not to stabilize the entrenched, generic distinctions between them. I set forth such a comparison to foreground the fact that animation, as a film art, works frame to frame to recompose a movement during projection. Historically, live-action cinema became (and to some extent remains) the privileged model for recomposing movement with film. To begin with recoding is thus intended to highlight the importance of movement and the filmic nature of animation. Yet it is also intended to open questions about other kinds of movement, in other multi-media – like *anime*.

Animation presents other possibilities. For, to compose a movement, animation must first decompose or decode it. Even when animation closely follows the models of live-action cinema, it does not merely copy or replicate. It recodes, and thus decodes. Decoding goes beyond an imitation or reproduction of live-action cinema, and opens up new possibilities for expression. It reaches into so-called live action and unravels it. It thus goes to the heart of what is 'live'. This is a potential of animation that becomes especially important in *anime*. *Anime* cuts to the quick of the 'live'.

Flatness

The perception of animated characters as cut-outs, as flat and two-dimensional, often plays into negative assessments of animation's potential as a serious, mature form of expression. What kind of seriousness can be attained in a world in which characters do not seem to have weight or depth? One way to open new venues for discussion is to situate animation in the lineage of a prestigious art, such as painting.

It is not unimaginable, for instance, that stills from an animated movie could be viewed as art, displayed in museums, and in that context, their 'flatness' comes into dialogue with traditions in art. Questions can be posed about composition in animation, about technique, about line, colour, perspective, visual organization and so forth. What might otherwise be dismissed as lack of depth, provided it is linked with currents in art history, then offers new possibilities for thinking about art. Animation thus becomes allied with aesthetic seriousness by way of

art-historical traditions and commentaries. A good example is the recent exhibit and volume called *Superflat*, put together by Murakami Takashi (2000).

Murakami identifies a lineage of 'superflat' sensibility across a range of *ukiyo-e* prints, which he traces into *anime* and *manga* and into contemporary Japanese art and photography as well. There are, of course, certain pitfalls in associating animation with gallery art. There is the risk that animation will serve only to reconfirm the legitimacy of hallowed lineages, to breathe new life into authoritative traditions. This is a potential problem with Murakami's account, much of which seems intent on re-articulating a relation between traditions of artistic expression in Japan and the West. As a consequence, his discussion of *anime* – as *Japanese* expression – runs the risk of a simple retrieval of tired, tendentious oppositions between Japanese and Western traditions. And there is the risk that art criticism then functions merely to legitimate the aesthetics of mass-market commodities.

The interaction of art and *anime* is crucial, however, if only because cel animation is produced with drawings. Moreover, many animators deliberately draw inspiration from or cite traditional art styles. It is not uncommon to locate the origins of Japanese *manga* ('comics') and *anime* in twelfth-century art (see Schodt 1996: 22; Takahata 1999; and a fuller discussion in Miyao this issue). And animators may deliberately evoke graphic styles that have been enshrined within Japanese art-historical narratives. A prime instance is Miyazaki Hayao's evocation of *nihonga*-style landscapes in *Mononoke hime* (Princess Mononoke) (Studio Ghibli, 1997). And, as art historians like Jacqueline Berndt (1999) have argued with reference to *nihonga* in *Princess Mononoke*, certain styles bring with them very conservative and problematic connotations. Something important is lost when *anime* is entered into art historical lineages, not least of which is the historically-specific cinematic or multimedia dimension of *anime*. Needless to say, this is also one way in which *anime* and gallery art can serve to sell each other, to accumulate mutually a kind of cultural capital.

What interests me in Murakami's account, however, is its hints of something that may not be immediately recuperable within art historical lineages or reducible to the mass production of commodities – movement. This is because attention to movement in *anime* potentially leads beyond aesthetics to considerations of experience and spectatorship, and what are sometimes called cultures of consumption. Murakami's account suggests that, if one is to think across media and between lineages, then one has to think about kinds of movement. He does not centre his account of flatness or two-dimensionality on movement *per se*. Yet his discussion invariably returns to, and turns on, the problem of movement. He signals, for instance, a kind of visual organization in early modern Japanese art that serves to draw the eye across images in specific ways. And it is this movement that serves to define *anime* for him as a distinctive form of expression.

Murakami also notes that it was in the 1970s that consumers in Japan first became aware of a distinctive *anime* aesthetic. This awareness emerged in response to the art of animated television series. Of particular importance to

Murakami Takashi's account is the work of animator Kanada Yoshinori. Kanada worked on two television series based on works by Matsumoto Reiji, *Uchū senkan Yamato* (1974), which was later adapted and televised in North America as *Stars Blazers* or *Space Cruiser Yamato*, and *Ginga tetsudō three-nine* or *Galaxy Express 999* (1978). It was in such series of the 1970s that the transformations in Japanese animation of the 1960s came to be fully expressed. At the same time, the appearance of a journal devoted entirely to *anime*, *Animage*, underscored the new awareness of a distinctive *anime* aesthetic. In short, between the 1960s and 1970s, *anime* was born as a distinct form of expression. Awareness of a distinctive *anime* aesthetic grew out of the art of 'limited animation'. Limited animation, which I shall discuss in more detail throughout this article, might be thought of as a series of short-cuts used by animators to convey a sense of movement in animation with the most limited of means.

Murakami himself does not discuss limited animation in great detail. He is content initially to note that it informs the work of an animator like Kanada Yoshinori, with its emphasis on shape-shifting and metamorphoses and on timing and movement (2000: 12–15). Subsequently, he mentions that it makes use of two-dimensional designs inspired by classical Japanese scrolls and statues, and it allows for special movements and explosive effects (2000: 114–15). And, generally, he is content to speak in terms of something like an aesthetics or poetics of Japanese animation, which involves an emphasis on internal coherence of works rather than broader considerations of experience of objects. Nevertheless, looking at limited animation provides a way to begin a discussion of animation and *anime* that raises a number of interesting questions.

The emergence of an *anime* aesthetic is typically traced back to the technical limitations placed on *anime* production during the global economic crisis of animation in the 1960s. Financial constraints were such that studios could not afford to produce 'full animation', in which animators draw as many as twelve frames per second, in which an image lasts only two frames. It was around this time that the first animated television series emerged in Japan. Notably, Mushi produced one of the first series, Tezuka Osamu's *Tetsuwan Atomu* or *Astro Boy*, which began in January 1963 and ended after 193 episodes in late 1966. Constrained to work with drawings that could be sustained for five or six frames, animators adopted different strategies for composing and conveying movement, other than drawing it frame to frame. The result was limited animation, which had profound aesthetic consequences.

Animators began to place emphasis on the most visually and emotionally important poses, which could last over many, many frames. Whence one of *anime*'s staples: the protagonist's face racked with emotion, rather like a close-up but with no movement or extremely restrained and repetitive movement (for example, brows or lips twitching in anger). Animators tended to suppress intermediate movements, which resulted in jerky or awkward, less graceful actions, or explosive and uncontained transitions. There also arose a tendency to move the

drawing rather than to draw the movement – a reversal of the conventions of full cel animation. Rather than drawing each stage of a figure walking across a background, a less fully animated figure could be pulled over the background. Moreover, as a consequence of the emphasis on static images, camera effects became more pronounced – panning across images, following objects, tracking up or back, framing in or out (to use some of the terms deployed in Miyazaki's work; see Studio Ghibli (1984b: 153)).

These and other features came to define the look and feel of *anime*. And, as *anime* emerged as a form of expression conspicuously different from other modes of expression, it is not surprising that many *anime* artists began to express bewilderment over the global popularity of their work, and many insist that their work is by and large specific to Japan and probably intelligible only there. What is more, it is still common in discussions of *anime* to link its differences to some kind of Japaneseness. This is usually done by opposing Japanese animation to Western animation, often through comparison of some major Japanese figure, such as Tezuka Osamu or Miyazaki Hayao, with Disney productions.

Yet, to reduce the complexity of *anime* to Japaneseness is to ignore the complexity of Japan in particular, and of the modern nation in general – not to mention the importance of globalizing forces in the production of mass culture. Here it is not possible, and probably not desirable, to take up a critique of broad, abstract oppositions between Japan and the West. It should be evident, however, that my strategy of exploring different qualities of movement is intended as a way to deal with the specificity of *anime* and, at the same time, to raise the possibility of differences among various *anime*, without recourse to abstractions like Japan versus the West. Look at the way in which animators like Tezuka Osamu, Miyazaki Hayao and Matsumoto Reiji describe their early delight in the work of Disney or the Fleischer Brothers and their subsequent interest in European comic artists and animators. Or consider the notions like 'japanoid' that spring up in Japanese commentaries on science fiction and *anime* (as in Tatsumi (1993) and subsequently in Ueno (1998)). In the instance of *anime* at least, the operative relation between Japan and the West is not a monolithic one of resistance, opposition and rupture. On the contrary, the relation involves processes of multiplication of, departure from and mutation within sources and models for animation. It is these kinds of processes that played into the generation of new media experiences, and even new, global cultures of consumption, around *anime*.

In the 1960s, for financial reasons, animation could not continue in the old ways, and, by the mid-1970s, something new was emerging, something that began to show awareness of its distinctiveness, in spectators, producers and *anime* all at once. What was it about Japan of the 1960s and 1970s that enabled the emergence of *anime*? What kinds of conditions lent force to this sort of relation between Japan and the West that was not one of dependence or resistance, but rather one of multiplication and mutation?

Here it is no longer a question of Japan and the West so much as it is one of

Japan in the world. There are so many different socio-historical forces at work that it would be rash to establish a single set or to seek some narrowly causal explanation. Nevertheless, it is impossible to ignore the intensification of the logic of capitalism and consumerism in Japan in the wake of the so-called economic miracle – an intensification that reached its fullest expression during the ‘bubble’ period (1985–92). I think that it is no coincidence that an awareness of *anime* emerged in conjunction with the notion of the ‘information society’. As Morris-Suzuki shows in her path-breaking study (1988), the idea of the information society, coined in Japan in the late 1960s, steadily achieved greater currency and popularity in the 1970s and 1980s, because it promised a means to continue high-growth economics by reducing the costs of production (thus ensuring increased profits without changing wages). Thus technical innovation, based on information technologies, became the perceived solution to sustaining economic growth, for it would at once streamline production and enable a diversification of products for consumers. In a very real sense, when looked at from the standpoint of production, limited animation did something analogous. It allowed for technical innovations that reduced production costs. This is its economic determination or financial culture, so to speak. Not surprisingly then, technical innovation and experimentation also became central to *anime* stories, and many stories deal with the passage towards a new order, pivoting on the rise of computers, robots, cyborgs, biotech and so forth, albeit often with great ambivalence.

Limited animation also shaped a new kind of viewing and consuming, one that entails scanning, re-reading, searching information, discerning technical innovation and so forth. In other words, one might say that *anime* generated a viewer experience that was very much like an experience of informatization itself. And thus I think it no coincidence that *anime* emerged, and is still emerging, into the global market in conjunction with the new economies of globalization and informatization. This is because post-war economic transformations situated Japan in relation to new kinds of totalizing forces, ones that are now described in terms of globalization, information society, the digital culture and so forth. So it is not surprising then that so many *anime* also spin tales about totalizing forces. There are so many *anime* in which Japan occupies the place of the globe – Japan or the world is invaded by aliens; Japan or the world is on the verge of total destruction; or Japan as the world saves the globe from destruction. It is probably no coincidence that ‘glocalization’ is also a term coined by marketers in Japan.

Now Murakami links the emergence of an *anime* aesthetics – its flatness – to the restrictions imposed by limited animation. This is now the common wisdom about *anime*. Intent on putting a positive spin on *anime*, Murakami does not call attention to socio-historical conditions or economic determinations. He ignores them, in fact. He turns to the productive aesthetic consequences of the economic limitations placed on animation in Japan. What is important is that his emphasis on aesthetic consequences hints at something more than the mere appearance of a commodity with a new look and feel. The emergence of *anime* involved a new

awareness in producers and viewers, a new experience that might be called 'animetic' or, to use Looser's turn of phrase, 'anime-ic.' This is to stretch Murakami's aesthetics a good deal, maybe to the breaking point. Yet the hint of an *anime-ic* awareness or experience is not without possibilities. In particular, it opens possibilities for an account of *anime* that would not reduce it to socio-historical or economic determinations, yet that would allow one to reconsider those determinations with greater complexity – precisely by not ruling out the ways in which consumers might make *anime*, as they read, view and experience it.

I have already made one suggestion in passing – that the experience of *anime* is an experience of informatisation. And this is the one that I wish to explore, that I wish to consider from the ground up, so to speak. Part of that experience is predicated on a breakdown of a certain model of live-action cinema. *Anime*, as it emerged through limited animation, created an awareness of the process of decoding that is part of any recoding of live action (even the cinematic). Such an awareness of decoding can also be extrapolated from Murakami Takashi.

Murakami insists on the flatness or two-dimensionality of *anime*, thus restating the common wisdom about *anime* emerging from limited animation in a rather novel way. His comments are remarkably brief; he limits himself to the flatness manifested in the metamorphoses and timing of *Galaxy Express 999* and *Space Battleship Yamato*. But how does the paradigm of flatness lead to an interest in metamorphosis and timing? About this connection, Murakami's text remains silent. Yet metamorphosis does seem logically to follow from flatness. This is because, if one thinks about flatness in terms of two-dimensional surfaces, then the logical question becomes: how does anything happen in this surface world? How does anything come forth or vanish? And how is such change expressed? Clearly, events and change can be expressed only in terms of an interaction of surfaces, as a movement of surfaces on surfaces, as shift from surface to surface. I should like to stretch Murakami's superflat, and think of a superflat that entails flat interactions or flat articulations. That is, the superflat becomes a quality of movement, change or transformation.

In effect, the supposedly flat and depthless characters and figures in *anime* are superflat. In their very flatness, they are traversed by a potential for interaction, motion and transformation. They move on a specific field of forces.

There is another, maybe easier, way to think about this. In limited animation, animators tend to suppress the intermediate positions in a movement. If an animator can make a figure appear to walk using only three drawings – one leg out, both legs together, the other out – why then draw all the intermediate stages? The result is obviously recognizable as walking. With this minimal approach to presenting movement, however, something new appears in the mechanism of recognition, something that troubles it. The walking, so minimally presented, may evoke a sense of skippiness, jerkiness, awkwardness or artificiality. The figure becomes not simply a walking automaton. Rather it becomes an automaton of

walking. It is a machine of walking, in a manner of speaking. It walks objects – and potentially anything becomes an object: human figures, animal figures, stones, trees, machines, crowds, planets and so on. One becomes aware of a machine of walking, because one is aware of the interval between images, between positions of movement, between surfaces. Animation then becomes something other than a process of animating figures, of drawing all the stages to produce seamless movement. It is a process of inventing machines of movement – machines of walking, of talking, of running, leaping, flying, and so forth – that take up all manner of objects.

It might be concluded that limited animation simply makes viewers aware of the film process itself, of the projection of twenty-four frames per second. By extension, one might construe it as a kind of modernist take on cinema, or as an experimental response. But this is not exactly what *anime* is about.

The greater part of the films considered to be *anime* are mainstream mass-culture products – rather than avant-garde art experiments (if the distinction can still be said to hold) – albeit ones that frequently involve subcultures, interest groups, fan cultures or communities of affect. This means that, by and large, the awareness of jerkiness or awkwardness is supposed to be suppressed or relatively neutralized by the narrative drive of the *anime*, or by its overall effect. This was Tezuka Osamu's feeling about limited animation when he made *Astro Boy*: he submitted that viewers would accept the shortfalls of limited animation if they were sufficiently interested in the story. For Tezuka, narrative is to absorb spectators, overcoming techno-artistic limitations. Probably he never imagined that those limitations might be perceived as aesthetic choices and technical innovations.

Yet there comes a moment (as Murakami points out) when animators begin to think of limited animation as a distinctive form of expression, as the attraction. And then the 'jitter' – the jerkiness or skippiness – in the animated figure becomes central to the story. Storyless or non-narrative elements begin to have an impact on stories, to inform narratives and to generate new narratives. It is not just that automaton figures of all kinds (mecha, cyborgs, robots and so forth) become central to *anime* narratives. To resort to the prior example, it is not simply a question of a walking machine, a flying machine, a living machine. Rather, it is a question of a machine of walking, a machine of flying, a machine of living – such machines traverse and organize narrative. And the Tezuka-style stories, in which one comes to understand the humanity of the automaton, steadily give way to narratives in which everyone, everything, is machinic, automaton. Rather than high-culture critique or avant-garde experimentation, *anime* strives to generate new cultures. As a consequence, it does not only spin narratives of the future but also proposes futures of narrative.

And so, to those who think of animated characters as somehow flat and depthless, the reply is: 'Of course, and not only that, they are superflat.' The superflat of limited animation opens a sense of the interval, in two sites in particular: (1)

one senses the interval within the movements of individual characters or figures; and (2) one feels the interval between surfaces such as foreground and background. This second feature will be discussed in the final sections. At this juncture, I should simply like to make a point about the superflat or *anime*-ic experience: *anime* does much more than tell stories about machines, automatons and monsters. *Anime* goes far beyond a concern for how to deal with artificial life. As limited animation pushed animators to seek the minimum for the expression of movement, *anime* became concerned with the minimal conditions for life, and with the question of how to generate life from movements.

Because *anime* often finds life wherever there is the trace of a movement or energy, the world of *anime* is one in which so many alternative lifeforms come into existence. Life could arise from the circulation of electrons, from the whirl of gears, from the combination and recombination of bytes, from light through the rain – or, from the movement between lines in a drawing, between surfaces or between frames. In other words, through *anime*'s exploration of the limits for life-like movement, it arrives at a new world in which autopoietic entities seem able to arise anywhere there occurs a repeated interval. This extends to themes and topics as well. There are so many *anime* about discovering or inventing other forms of life, or about confronting or battling other forms of life. There are frequently alternative lifestyles as well. And again and again the central concern is posed, generally with an aura of childlike or adolescent innocence: we do not yet know what life is. Not only do we not yet know what life is biologically, chemically, physically, spiritually, metaphysically and so forth; but we also do not know – we refuse to know even as we strive to know – what this world is. We do not yet know what this world, this life, is *of*. How then to know what this life is *for*?

In effect, economic obstacles promoted technical innovation, which in turn generated the positive unconscious of *anime* (minimal movement = minimal life = information). This positive unconscious became operative in the aesthetics of limited animation precisely where limited animation began its break with the replication of live action aspired to in full animation. Of course, it is possible to see, retroactively, the same breaks occurring everywhere in full animation (and in cinema too). For, in order to recode live-action cinematic movement, animation had always to decode it. With limited animation, however, the decoding of cinema is pushed to the point where live action itself is decoded, and thus the 'live' of action is called in question, and so ultimately is life.

This automaton effect, this machine of moving, this *informing* machine, lives at the core of *anime*-ic form. Yet, because it is a kind of positive unconsciousness, it is never fully or simply expressed. I would venture to say, however, that the most interesting *anime* are those that strive towards a pure expression or sustained exploration of it. For all its immediacy (you can see it, experience it), it enters into various layers of treatment. It shuttles along, pulses, pushes one way or the other, combines with other effects, buries itself in continuous actions, traverses stories, surges forth as an enigma and so forth.

To explore the range of *anime*-ic expression, I would ideally like to look at a number of different lineages that have developed around different studios; around different technologies; around specific animators, writers, producers, character designers; and around different varieties, genres and cultures. Yet this essay permits only treatment of one lineage, and so I turn to the animation of Miyazaki Hayao, and especially to *Tenkū no shiro Raputa* (*The castle in the sky*, 1986).

There are a couple reasons for this choice. Because Miyazaki's are often deemed to be the most cinematic of *anime*, they allow further exploration of the problematic of an *anime*-ic recoding/decoding of cinema. Not only does Miyazaki show a marked preference for producing *anime* for theatrical release (rather than for television or video release), but his *anime* films are usually deemed to be very cinematic in style. Moreover, the budgets for his productions are large enough to allow full animation. Finally, Miyazaki is involved at every level of production: he not only writes and directs but also oversees and works directly on animation and storyboards. He thus introduces an overall continuity in style and story – a cinematic sort of *auteur* effect. This differs from many *anime* directors who prefer to let the styles of individual animators show, to allow for a visual play between diverse styles. Thus, in many respects, Miyazaki appears to be the least *anime*-ic and most cinematic of animator-writer-directors.

Nevertheless, there are profoundly *anime*-ic tendencies in his films as well. In recent films, for instance, he has recourse to techniques of multilayer compositing that potentially reduce the sense of slippage between foreground and background and increase the cinematic feel – as in the 1997 *Princess Mononoke* (see Studio Ghibli (1999: 180–1) for an overview of multilayer compositing). Yet, despite such possibilities for compositing, his films tend nonetheless to emphasize the play between foreground and background in a very *anime*-ic way. What is more, despite the budget for full animation, the animation of human and animal characters in his films evokes forms of movement that are quite unlike anything that occurs in cinematic movement. In addition, as is frequently remarked, Miyazaki expresses a deep commitment to cel animation: although *Princess Mononoke* uses some digital techniques (especially for colouring), these techniques are at the service of a very two-dimensional cel-animation aesthetic. Finally, Ghibli films, especially those of Miyazaki, have achieved such popularity that, for many viewers, they have come to define a sense of what *anime* is or can be. In sum, there is pronounced tension between the cinematic and *anime*-ic in Miyazaki's films – and that is the focus of this essay.

I shall discuss a tendency in Miyazaki to emphasize another crucial feature of animation – what I will refer to as 'weightlessness' – in a way that at once evokes and minimizes the machinic effects discussed above. He deploys very *anime*-ic effects (and themes) but tends to manage and control those effects in a way that minimizes their machinic potential. Oddly enough, it is his skillful management of *anime* techniques that imparts a cinematic feel to his films. His careful management of them also expresses one of his central

concerns: the necessity for humankind to use the minimum of technology, safely and wisely.

Weightlessness

Tenkū no shiro Raputa or *Castle in the Sky* opens with a view over banks of clouds, in which we see a tiny ‘flying ship’ (*hikōsen*), that is, a sort of airship or dirigible. We cut closer, to see a small yet bulbous craft with two propellers. There is some activity on board. One of the crew, a woman – later we learn that she, Dora, is the pirates’ leader – points out a large yet stately flying ship below them in the clouds. From the pirate’s airship emerge small planes with wings that whirl like dragonflies – flaptors. Thus begins a pirate attack on the large flying ship.

We cut to a view of a girl (Sheeta) through one of the windows of the large flying ship – it appears to be a sort of passenger liner of skies. Sheeta gazes out the window. She ignores food offered by one of the men who attend her – men in dark glasses. She prefers to gaze over the clouds at the full moon that appears amid the white billows. Suddenly astonishment crosses her face: the pirates’ flaptors whirl past her window, and Dora looks directly through the window at Sheeta.

As the pirates storm aboard the sky liner, a battle between the pirates and the ‘darkglasses’ ensues. The leader of the darkglasses, Muska, retreats to Sheeta’s room to radio for help. He opens a case with an antenna and begins to wire a message in something like morse code. Sheeta takes the opportunity to knock him out; she smashes him over the head with a bottle. She retrieves a pendant with a blue-green stone from him. It is her pendant. She ties it around her neck, and, as the pirates come crashing into her room, she slips out the window. The pirates attempt to capture her as she clings to the outside of the flying ship, but she loses her hold and plummets down into the clouds, earthward.

The opening sequence establishes two groups battling for the girl Sheeta – the pirates and the darkglasses. The sequence also calls our attention to her pendant, and so we realize that it is somehow central to the story. But only later do we learn that the darkglasses and their leader Muska have kidnapped Sheeta in order to seize her pendant, which is a ‘flying stone’ (*hikōseki*) with mysterious, gravity-defying powers (thus often glossed as ‘levitation stone’). Similarly, the pirates and their leader Dora wish to wrest Sheeta and thus the stone from the darkglasses.

Thus begins a kind of action-adventure treasure-hunt story. The pirates pursue the treasure out of greed, out of desire for wealth. The darkglasses pursue the treasure out of desire for mastery, for dominion over the world – for the flying stone is the key to a mysterious power source. Sheeta and a new friend, the boy Pazu, will follow a parallel track – their encounter with the flying stone launches them on a personal, quasi-spiritual quest to learn the secrets of the flying stone and the flying castle, Raputa.

The opening sequence is dense with informational elements that prefigure the

course of the action. It also establishes an initial directionality for the film: down. We look down from the pirate airship at the sky liner. We look down from the sky liner at Sheeta falling earthward. In fact, in the first portion of the film, the action moves from the skies to the bowels of the earth – from airships above the clouds down to the earth, then from a cabin high on a hill down to the town below, then down a mine shaft into tunnels deep within the earth. Subsequent actions lead back from the depths to the heights, up to the castle in the sky. Working their way up into the heights proves arduous for the two heroes, Sheeta and Pazu. It is as much physical effort as moral journey – a trial of courage and values.

In brief, from the outset, the film establishes a topology for a world arrayed vertically. Lowest are the mines, above them the miners' village, and cut into the cliffs and on the hill tops are other dwellings and worksites. Pazu's shack stands high above the village, it is fairly part of the sky; and he tends birds and dreams of building an airplane to soar into the clouds. Pirates and armies command the skies, but above and beyond them floats the castle in the sky, Raputa.

Action sequences – largely scenes of pursuit – tend to be laid out horizontally, as with the first pirate attack. Yet the film develops its overall movement along the vertical topology of its world: it circles down from the skies to the depths of the earth, then back up into the clouds. This establishes an initial rhythm for the film's sequences: pursuit and battle scenes occur primarily along the horizontal, followed by escape by falling downward or flying upward. So it is in the opening sequence: pirates storm through the ship, and Sheeta falls and escapes.

Of special interest is how her falling is rendered. Initially, in the opening sequence, her fall is rendered as if seen from the flying ship. There is a shot of clouds, parted to show the earth between them, and the figure of Sheeta becomes smaller and smaller, as if receding from us. How do we see this decrease in size as movement away from us? How do we know that this movement away from us is downward movement? After all, we are looking across at the image, not down. How do we know that she is not being sucked into a distant point on the horizon?

There are all kinds of visual cues that guide one to perceive her moving away (not shrinking) and falling (not moving horizontally). Visual cues prepare us to see falling: the scene takes place on an airship, and so the view is from the ship; we recognize clouds and the lights of a city on the earth – things that are below. Thus we perceive 'downness'. As for 'receding-ness' or depth, the background is darker, and the figure becomes fainter as well as smaller – thus we see depth and movement into it. Still, these are conventions, and it is not impossible for someone to think, 'she's shrinking' or 'she's being sucked into another dimension'.

The potential for confusion about depth and direction is especially pronounced in cel animation in which the cel for a character is laid on top of the background or placed in a slot in front of it. Usually, the background is rendered in more subdued tones and colours in order to impart a sense of depth, yet foreground and background are then seen as distinct layers. This is why techniques of computer compositing are now widely used with big-budget animated features: to

smooth out the relation between foreground and background, and thus to impart a sense of 'real' depth and of 'real' movement in and out of it. *Castle in the Sky*, however, draws and paints such effects, with gradations of colour and darkness to create a sense of movement in depth, in conjunction with visual cues.

Still, even though one could say that this is an 'adequate' solution to the problem of rendering movement in depth, the preference in *Castle in the Sky*, as in much of Miyazaki's work, is for scenes in which figures move across backgrounds, not into them or out of them. The scenes of movement in depth are relatively brief and used primarily in the manner of establishing shots. They establish the movement of the action to another level, below or above the actual scene – the vertical topology. There are all kinds of panoramic views in *Castle in the Sky*, and the film provides innumerable views down into valleys or up into the skies. Yet the film usually avoids a presentation of the movement-in-depth itself – unless in the form of a distant trace mapped upon panoramic view. There are, as I have suggested, pragmatic reasons for this. Yet it also enables an aesthetic emphasis in Miyazaki for dealing with movement – both in the overall story and for his heroes. His is a preference for floating, gliding or circling. He values weightlessness, lightness, buoyancy – achieved with the minimum of technology.

For instance, the opening sequence establishes that Sheeta is falling toward earth, then (after the title sequence) we return to Sheeta falling through the dark skies. Now, however, it is a horizontal or lateral view, from a distance. She falls head first, arms at her side, immobile. The viewing position comes closer to her, and we see that she falls, eyes closed, as if asleep or unconscious. Significantly, her body does not move through the frame. As if to emphasize her unconscious dreamlike state, she remains in the same position in the frame – as if not moving at all. Given an immobile figure and static frame, how do we perceive falling?

In addition to context, there are a number of cues to orient a perception of falling. Most obviously, she is upside down, which suggests falling. Moreover, when framed distantly, her body is positioned just above centre in the frame – to reinforce the sense of a downward direction to the figure. Framed closely, she is still positioned above centre, with much of her body out of the top of the frame. And her skirt flutters.

There are so many ways to assure that our sense of her falling is sustained, even as the framing changes. Yet such techniques should also serve to remind us of one of the other central problematics of animation: the weightlessness of figures. Which is to say, without specific indications for direction of movement, these sketched and painted figures, in and of themselves, are oddly buoyant and light, seemingly weightless, not rooted or anchored in their environments. Again, this effect is partly due to the fact that the cels for characters are laid atop, or slotted in front of, backgrounds. There remains a sense of a gap between figure and background. This is particularly true when one moves the drawn figure over the background. Then the sense that the figure is unmoored can become pronounced. Whence the dictum: draw the movement, don't move the drawing. But the effect

of weightlessness also arises at the level of the drawing of the figure, in the erasing of lines in order to clean up sketches. This merits a brief digression.

When animators render figures in movement, they sketch lines that show weight shifting, that is, lines of 'implied mass'. For instance, there is the movement of the hip as weight shifts from one leg to another – what is drawn is a bulge at the hip that shifts as the person or animal moves. Thus an animator might try to give the impression that this is real walking, that is, walking under earthly conditions with physical laws of mass and gravity. Such natural laws and forces, however, do not arise naturally in drawing. The animator strives to create an impression of them.

It is worth noting in passing that this is one respect in which animation seems very different from cinema, because natural laws like gravity are already part of the world recorded by the movie camera. Nonetheless, without careful construction of 'natural' lighting and depth, film characters also become easily unmoored and float against depthless backgrounds. In animation and especially in *anime*, a kind of 'montage internal to the shot' is often in evidence. Once one is accustomed to the 'internal montage' of *anime*, one becomes more attentive to, rather suspicious about, the alleged naturalness of the world recorded by the movie camera. And it seems that cinema, like *anime*, has already transformed the world into sheets of information and 'composited' them ('informatized' their composition).

To return to the drawing of animation, the general tendency in animation is to clean up sketches, and the erasure of sketch lines lessens our sense that animated figures move in accordance with physical laws. The evocation of implied masses is much diminished. Klein notes such effects in his account of morphing (2000: 23). Klein does not mention, however, that there is a pragmatic reason for erasing or cleaning up sketches, for creating simple contours. When the animation of figures is limited, when intermediate stages of movement are removed, the figures themselves must be drawn more simply. This is because viewers tend to accept limited animation from simplified characters. If the character is drawn in great detail, the omission of intermediate movements becomes overly evident – jittery, jerky, stuttering, awkward. And so, between the character sketch and the outline traced on the cel, lines must be erased. Sketches are reduced to simple lines of contour. A blizzard of sketch lines often becomes a single line. This is a way to diminish the viewer's awareness of gaps in animated movement. Simplification of lines and figures potentially serves to manage or direct the machinic potential inherent in animation.

With simplification, however, another potential is introduced – a sense that these simple figures, whose movement now appears graceful and fluid rather than awkward and jerky, do not obey our natural laws of movement. This is because simplification dramatically reduces our sense of the weight and mass of the figure. Only the barest evocation of 'implied mass' remains. As a result, the movement of animated figures does not give us the sense of viewing masses that act and

interact in accordance to physical laws. Figures in animation seem to obey other laws. They seem to act from, and to generate, other 'non-natural' forces. How easily the actions of animated figures seem to dovetail with supernatural, extra-terrestrial or metaphysical forces!

A number of 'reality options' exist for introducing laws and forces into a potentially lawless space. At one extreme there are all the current attempts to simulate physical laws in computer-generated imagery, to make those flying fists and crashing bodies appear to have weight and substance, to have video games feel more like real fights (Zardonella 1999). And it should be noted that the animation from Disney studios in recent years has gone to great length and expense to generate creatures with locomotion like that of real animals – for instance, the Beast in *Beauty and the Beast* – with scientific advisors to develop proper skeletons and plausible musculature and so forth. This emphasis on 'real' anatomy compensates for the 'unreal' weightlessness of animation's simplified characters. It increases the reality effects of the fantasy world.

Generally, *anime* explores other options for introducing forces and laws of movement into its worlds and characters. Its solutions are as varied as the mecha transformers of the *Gundam* universe, *Guyver's* biobooster armour, Jubei in *Ninja Scroll*, Lum in *Urusei Yatsura* or the Angels and Evas in *Evangelion* – too many to explore here. Yet there seems to be a general trend away from constructing resemblances to organic beings in natural worlds. Many *anime* tend to be interested in the movement of inorganic, machinic entities. Many *anime* deal with the interface of machines and organisms, at the boundaries between inorganic and organic forms. Many introduce characters whose very sketchiness and simpleness seem reason enough for their weightlessness: soaring characters such as Lum do not have anatomical or morphological features to explain their ability to fly (they do not even have capes). Other *anime* have characters such as ninja or swordsmen whose ability to perform gravity-defying stunts with great self-control comes as an extension of acrobatic training, spiritual discipline – and stop-motion weightlessness. Yet none of these examples strives to recreate physical laws on the basis of resemblance to organic entities or natural worlds – anatomy, physiology, biophysics or even classical mechanics. This does not mean that *anime* avoids the sciences. To the contrary, it is full of sciences and science fictions. Sciences are not mobilized, however, to produce characters who correspond via resemblance to the natural world.

In sum, one response to the weightlessness of animated characters strives to introduce a sense of reality with an emphasis on implied masses, anatomical correctness, gravity and so forth. This is a system of 'correspondence-via-resemblance' that ultimately diminishes a sense of weightlessness. Of course, there always remains the potential for so-called non-natural abilities and forces, but it is carefully managed and channelled with resemblances. There is another response, one more pronounced in *anime*, which is to play with non-natural forces and other sciences, to work them directly into characters and stories – and to

follow the potential implied by different character designs. The difference is: applying movement to characters versus following the movements implied by character design.

My point is that animated figures are not constrained to construct resemblances by simulating natural laws or forces. In fact, the way in which they are produced tends to lessen correspondence-with-resemblance. Animated characters are, in essence, entities traversed by seemingly non-natural forces, of which weightlessness is the most evident. In the instance of gravity-defying characters, characters are generally designed in such a way that their weightlessness appears to be generated by the configuration of the character's body. Of course, there are often narrative explanations for characters' weightlessness too. Thus their weightlessness frequently derives from some special configuration of their body or condition or world, that appears at the level of line, character design, movement and narrative form.

This is the case with Sheeta in *Castle in the Sky*. As Sheeta falls head-first through space, the flying stone suddenly begins to emit a blue-greenish light, and her falling is slowed. She turns gracefully onto her back and floats downward as gently as if asleep in bed. There is now a marvellous cause for the suspension of gravity. The flying stone (or levitation stone) is a kind of anti-gravity device. The film thus directs our attention to Sheeta as a special case of buoyancy. We notice less that all the characters in this world are weightless, for weightlessness is figured visually in Sheeta. At the same time, because all the other characters actually are weightless, Sheeta can appear to be the only character able to realize a potential latent in all characters – the weightlessness (or freedom) of all humankind.

This follows narratively as well. For, oddly enough, only Sheeta can activate the stone and its counter-gravitational forces. Initially, she summons its powers unconsciously, as she falls. Subsequently, she calls upon it in reverie. Only near the end does she call on it consciously, and then to prevent its use for destruction. Indeed, her story is one of becoming aware of the stone's powers, of realizing that this marvellous power is a mixed blessing and of taking responsibility for this legacy. It is significant that Sheeta tends to summon its powers unconsciously, defensively, protectively and not actively nor aggressively.

The stone is linked to her body in some unexplained way. It is activated by her calls for help, both unvoiced calls and calls voiced in an almost forgotten language, the language of her people. Sheeta apparently is one of the last in the lineage of a people who once mastered the power of flying stones. Miyazaki thus invents a natural connection between Sheeta and the stone, one that is vaguely racialized as a historical connection between a people and a power source. As it turns out, the leader of the darkglasses, Muska, is also of the lineage and can control the stone once Sheeta reawakens it. He wishes, however, to use it to dominate the world. His active, aggressive command of it contrasts dramatically with Sheeta's passive, protective calls to it.

Although Miyazaki links the stone naturally (that is, racially) to a people, he

does so in order to stage a conflict within a people as well as between peoples. Which is to say, his evocation of an ancient bloodline is not one that affirms racial purity or ethnic harmony. The ancient bloodline is evoked to establish that the heroine is coming to terms with an historical legacy of conflict and destruction. Moreover, in many respects, the conflict between Sheeta and Muska is a manifestation of a conflict within her. Sheeta is a kind of every-human who realizes a potential latent in all people, not just in her lineage. Hers is also a personal conflict between delight in and fear of the stone's powers. Thus, in effect, Miyazaki establishes an analogy across every level of conflict within the story: it is within a person (Sheeta), within a people (between Sheeta and Muska), within humankind (conflicts between various groups and war between people of the sky and people of the earth). Sheeta's natural/historical connection with the stone makes her the embodiment of all of these conflicts. Her body, her decidedly girlish body, then promises a site of resolution. How is this achieved?

I would argue that floating becomes an expression of a specific sort of freedom, embodied in Sheeta, which is neither aggressive striving nor fatalistic resignation, neither progress nor retreat. As Sheeta gradually realizes the potential for weightlessness and learns to float and glide, she achieves freedom within her world. At the same time, this is a story in which an animated character realizes the weightlessness constituent of animated characters. In other words, her floating is also an expression of a potential within *anime*. This has certain consequences, which demand fuller discussion, especially as regards the matters of gender and genre.

Floating and gliding

Like so many *anime* stories, like so many Miyazaki stories, Sheeta's is a kind of coming-of-age-story. It is a narrative of the passage from childhood to adulthood. Miyazaki does not tend to visualize this transformation in the hyperphysical way prevalent in many *anime*, with morphing and mutating bodies such as mecha, cyberbodies, werewolves, monsters and so forth. (Such 'transformer' designs foreground the machinic potential of animated movement, which Miyazaki tends to de-emphasize, even to counteract.) Sheeta's transformation is not visualized in a transformative character design. Apparently, hers is an inner transformation, a moral or spiritual transformation.

I say 'apparently' because her transformation is nonetheless rendered visually. It is superficial, in the positive sense. If one attends only to dialogue and narrative, there is something rote and predictable about her transformation; it is a rather conventional character arc. Narratively, for instance, her transformation involves learning about the flying stone – how to use it and what it can be used for – a moral lesson. Visually, however, her transformation has far more attractiveness, for it hinges on taking to the skies, of realizing an ability to soar and glide.

Sheeta has a 'natural' gift, the flying stone, which enables her to float safely

down from the skies rather than plummet like a rock. Later, captured by the dark-glasses, in a reverie of her childhood, she awakens a giant robot who has fallen to the earth from Raputa. The robot, to protect her, lays waste to the fortress where she is held, as well as the surrounding countryside. Sheeta sees the destructive powers of Raputa's energy source, the flying stone, for the first time. Pazu, who has joined company with the pirates to save her, comes to her rescue in a flapper. Sheeta is whisked away and, with Pazu and Dora, flies back to the pirates' ship.

As is so often the case in this kind of story, the eccentric, irregular, smaller group proves rather kindly, and in order to combat the vast, impersonal, mighty forces of the army and the darkglasses, the hero and heroine strike up an alliance with this band of irregulars. Thus Sheeta points Dora and the pirates in the direction of Raputa. The military airship carrying Muska, his darkglasses and an army to Raputa appears in the clouds below the pirate ship. To scout the way, Sheeta joins Pazu in a glider attached by a long cord to the pirate ship. As the military airship attacks the pirates, Sheeta and Pazu's cord breaks. The two sail into the tremendous bank of clouds that encompasses Raputa. Buffeted by electric storms and winds in the glider, they arrive at the island in the sky before the darkglasses and the pirates.

Raputa is a labyrinthine world of expansive gardens and domed towers, with stately arches, arcades and bridges. At its centre stands a towering tree, for Raputa is a lost world, unpeopled and now overgrown by nature. It is a world where giant robots, once built to ensure military dominion, now tend gardens and befriend small animals. Sheeta and Pazu wander and marvel.

The darkglasses arrive, allied with the vast armies of the military. The soldiers begin to loot the ancient edifices. Sheeta and Pazu run off to aid the captured pirates. They are separated. Muska seizes Sheeta and takes her to the central controls deep within Raputa, where an enormous crystal of flying stone powers the island. Muska uses the stone to unleash the destructive forces of the flying fortress, waging war across the earth and sky. Meantime, Pazu stealthily cuts the pirates' bonds. Then, while he tries to find Sheeta, explosions rock the island and send him flying. He clings to the dangling roots, climbs while dodging robots and other obstacles. He eventually gains the interior and hears Sheeta's cry for help. Sheeta has grabbed the flying stone from Muska and fled with it. She hands it to Pazu. Then, Muska threatens to kill her if Pazu does not return the stone to him. In response, Sheeta and Pazu decide to intone together the words that make Raputa self-destruct, even though this could mean their death as well. Thus the machines of destruction fall away from Raputa, as the giant tree, with the flying-stone crystal in its roots, rises heavenward.

As this overview indicates, Sheeta's journey seems quite passive – at least until the moment when she stands up to Muska, but even then her power lies in words not battle. Similarly, she accesses the stone in an unconscious or dreamy fashion. She is kidnapped, rescued, whisked away, passed from group to group – almost as if she were one with the stone, merely an object with latent energies. Even

though she decides to join Pazu in the glider, she does not pilot it. Ultimately it is the force of events that carries her along. She is buffeted along as if on the winds. To state this more positively, one might see her role as one of buoyancy and pliancy rather than mere passivity. Hers is an ability to ride the flux of events, but with intuitive connections that lead her in the right direction.

Pazu, on the other hand, is all effort and exertion. He clammers, climbs, leaps, forms alliances, fights and so forth. It is he who desires to find the legendary Raputa (to prove his father right; for his father once saw and photographed Raputa, but no one believed his story). Especially in the course of the upward journey, images abound of Pazu clinging and climbing upward. This contrasts sharply with Sheeta who is always being carried along and escaping. Unlike Pazu, Sheeta has no particular desire to fly; but, unwittingly, she has inherited the potential.

It is not surprising that many consider *Castle in the Sky* to be Pazu's story, a boy's adventure story. For he is the active character. In Miyazaki's plans for the film, he confirms this, proposing hypothetical titles: 'Young Pazu and the riddle of the flying stone' or 'Captive of the sky castle' or 'Treasure island in the sky' or 'The flying empire' (1984: 394). Yet, even if it is his story, the key to it is Sheeta's ability to float – her buoyancy or weightlessness, so to speak. Pazu is drawn into the game to get to the heart of this mystery. Unlike Muska, however, he does not wish to control the flying stone, but to protect it and her, to accompany and understand.

Because *Castle in the Sky* clearly assigns abilities and energies on the basis of gender, questions are always raised about Miyazaki's intentions and about the effects of such gender distinctions. As for his intentions, Miyazaki makes clear in his interviews that he resorts to heroines because girls, as principal characters in action stories, disrupt certain narrative conventions and expectations (see Miyazaki 1984–94). Miyazaki suggests that women with guns or a resolute stride create a sense of something unusual. He also expresses broader concerns about the action genre, particularly in his interview with Murakami Ryū (1989: 363–4).

In the same interview, Murakami expresses his admiration for Miyazaki's ability to achieve a happy ending without humanism – which demands a certain intelligence, a way of thought. It is this topic – resolution without totalization (happy ending without humanism) – that appropriately leads Murakami to pose questions about the advantages of films centred on heroines. Miyazaki's response makes clearer why he would introduce a heroine into a boy's adventure like *Castle in the Sky*. Generically, Miyazaki explains, such adventure stories present a boy or young man who has a great deal of energy but who initially does not know how or where to direct it. He finds his way only after a long detour.

Miyazaki, however, expresses his discontent with such easy stories. He complains that such narratives entail a simple resolution, in which the defeat of the villain solves all problems. With a girl as the lead, things do not close so totally; one issue is resolved, or one obstacle overcome, and now the heroine continues

on with that knowledge. For Miyazaki, the introduction of a girl into the action-adventure genre is, first and foremost, a way to surprise viewers and to open the genre to new narrative possibilities. In brief, Miyazaki prefers to work with heroines to avoid certain totalizing tendencies – which, as I shall discuss below, comprise both male adventure stories and narratives of technological progress.

Such remarks make clear that Miyazaki positions his work within the logic of genre. As a result, even when he introduces a girl to open the male genre, he still relies heavily on generic expectations and gender conventions – whence his remarks, for instance, about how unusual it is to see women handling guns or striding purposefully. And of particular importance is the empathy, understanding and feeling that Miyazaki attributes to women. Women do not strive to conquer and defeat, they come to terms with things.

So it is that Miyazaki resorts to conventional, even stereotypical ideas about women in order to transform the action-adventure story, which is coded as male. What is interesting is his awareness that he works within genres. He even shows an awareness that his use of heroines potentially reinforce certain gender expectations and conventions. Girls like Sheeta or Kiki, whose skirts intermittently flutter in the wind to reveal their panties (in all innocence, of course!), do not exactly break with certain kinds of expectations (and afford erotic possibilities that Murakami Ryū is quick to notice). As problematic as these stereotyped images may be, it is essential to note that this sort of visual signature for the girl's character implies more for Miyazaki than 'this is a cute girl'. Miyazaki codes such gender differences into larger, almost metaphysical differences. The fluttering skirts of the adorable girl already imply a certain potential for buoyancy in relation to the natural forces, to the wind – which creates other kinds of gender trouble.

All in all, Miyazaki does not try to break with genre or genre/gender conventions, he attempts to transform one genre by introducing the other gender. His gesture can be read as either instrumental or critical. On the one hand, it can be read as an instrumental use of stereotypes about femininity as a means to transform and revitalize received masculine narratives. (It is as if there is only one gender or genre, male; and the female is a genre that is not one.) On the other hand, it can be read as a critical use of feminine paradigms to challenge masculinist narratives. This is argued persuasively by Susan Napier in her discussion of Miyazaki's young heroines: 'Playing on traditional conventions with a contemporary twist, Miyazaki is clearly not only attempting to break down the conventional image of the feminine but also to break down the viewer's conventional notion of the world in general' (2001a: 125). Which is to say, to play with gender is to play with genre. Yet the question persists: is Miyazaki's play with genre/gender instrumental or critical? It would be reductive to see Miyazaki's reworking of gender/genre conventions as simply instrumental, as if there were nothing else to them. Then, too, it would be too much to attribute to Miyazaki a radical deconstruction of gender oppositions. In Miyazaki the logic of

genre/gender is such that the two critical and instrumental impulses are inseparable. As a consequence, a feminist critique concerned with representations of girls in Miyazaki quickly encounters metaphysical questions about technology and nature (to be discussed subsequently).

Castle in the Sky is ostensibly a boy's adventure story into which Miyazaki introduces a second 'hero', the girl Sheeta, who becomes at least important as Pazu, and maybe more important. Thus the logic of gender logic in *Castle in the Sky* might be styled as combinatory. It does not put the girl in the boy's place – as seems to be the case with Miyazaki's prior film *Kaze no tane no Nausicaä* (*Nausicaä of the Valley of the Wind*) (Studio Ghibli, 1984). Nor does it aim for a sort of feminine adventure story – as with Kiki's adventures in the subsequent *Majo no takkyūbin* (*Kiki's delivery service*) (Studio Ghibli, 1989). *Castle in the Sky* brings together boy and girl. They are distinct and different but are to work together. And their friendship or union must remain innocent to sustain this combinatory logic. Miyazaki lets them laugh, play, hug and touch – provided it remains innocent. Only once, as they roll on the grass of Raputa, is there the fleeting suggestion of an erotic possibility, which immediately dissolves into ebullient fits of laughter and antics. Their innocence assures that theirs is a combination or pairing of two independent genders/genres, not an overcoming of them by union or fusion. It is significant that innocence and chastity sustain their autonomy – as if sexual union and reproduction were imagined to be the site of social subordination. It is as if boys and girls each had their distinctive energies, interests and actions, and these can work together, at once autonomously and co-operatively – but only at a moment that precedes yet anticipates sexual interaction.

Miyazaki works with two characters with two storylines that intersect yet seem to sustain some degree of autonomy. Indeed, in the climatic scenes on Raputa, Sheeta and Pazu work together, but their actions continue to be distinctly coded for gender (she flees Muska while Pazu blasts his way through walls to help her). And for all the overtones that Sheeta and Pazu are a pair, the final solution is not that they find one another. They come together, act in unison. In brief, Miyazaki does not simply introduce romance interest into the action genre. (This is surely because the action genre typically uses romance as a way to subordinate the woman to the male hero.) Miyazaki, on the contrary, invents an action film in which there are two heroes with very different energies, masculine and feminine – or rather proto-masculine and proto-feminine – boyish and girlish.

In imagining the interaction of 'boy energies' and 'girl energies', Miyazaki generally construes them rather conventionally. Boys like Pazu or like Tombo in *Kiki's Delivery Service* are extremely active and expansive; girls like Sheeta or Kiki are far more introspective and reflexive. Moreover, in *Castle*, Pazu's memories are of his father, Sheeta's of her mother. And, as already noted, these differences are inscribed in character design, character movements and actions. Significantly, all these differences between boys and girls typically revolve around their different relation to flying. Boys are mechanically minded; both Pazu and Tombo are

budding engineers who strive to build flying machines that will take them into the skies. Their skyward dreams and aspirations are expressed in machines, literally and concretely. Girls, however, have stranger, more fantastical devices. Sheeta has the flying stone, while Kiki has her broom, both of which are posited as inherited potentials. In both instances, the potential for flight seems at first to be embodied entirely in the object itself, in the pendant or broom. Subsequently, the girls learn that these objects are expressions of an inner potential.

For both boys and girls in these two films, transformation is presented on the visible surface as a process of learning to fly, of taking to the skies, with all the spiritual ramifications implied by flight. Girls, however, seem to have a kind of natural gift for flying – this is true of Nausicaa, Sheeta, Kiki and even Mei and Satsuki in *Tonari no totoro* (*My neighbour Totoro*) (Studio Ghibli, 1988). It is something that is already there, naturally as it were, but that needs to find expression. This is how Miyazaki deals with the different relationship that he feels women have with nature.

In *Kiki's Delivery Service*, for instance, when Kiki temporarily loses her ability to fly, she visits her girlfriend Ursula, a painter, who is a few years older and thus wiser. Ursula tells Kiki that all artists or craftfolk have their 'ki' or 'chi', a traditional term which in this context means something like 'spiritual energy' or 'creative force'. Thus is Kiki's inner potential for flight associated with a kind of artistic, creative, quasi-spiritual relation to nature. This is very different from Tombo with his bicycle retooled into a primitive flying machine, which he strains and sweats to pedal fast enough to get airborne. In sum, these different energies of boys and girls imply different actions, attitudes and storylines; that is, gender always implies genre – and, if Miyazaki emphasizes the girlish, it seems intended to complement the boyish in a way that does not allow for subordination of one to the other. It is crucial to note, too, that Miyazaki uses gender conventions in a way that reinscribes an opposition between the mechanical and the spiritual, between technology and nature. This merits attention, for it is at this level that he attempts to create some new relation.

To anticipate my argument, I see this new relation as one in which the mechanical or technological is to be minimized and redirected. It is analogous to the ways in which the feminine Sheeta is designed to minimize and redirect the boy's adventure story. Miyazaki's film does not simply try to create a new story out of an interaction between genders and genres. His heroines' ability to fly is calculated as an alternative to received narrative genres. In an analogous way, his film aims to find some new potential within the art of animation, some potential that presents an alternative to received technologies.

Minimizing narratives of technology

It is difficult to be precise about alternatives to received technologies in Miyazaki. In all of his stories, there is a broad and general critique of the use of technology

for destruction and domination. It is as if all received technologies are inherently generators of social unevenness and destruction. Indeed, it sometimes seems that Miyazaki sees no alternative, that his response to this problem is to destroy and refuse all technologies – as with the final destruction of Raputa in *Castle in the Sky*. His response is not so pat as an elimination of technology, however. He is well aware that his art, animation itself, relies on technology. His alternative involves a minimization of technology – within his narratives as within his animations – through an exploration of alternative energies. Such an exploration involves the creation of specific kinds of alternative worlds and histories. Again, *Castle in the Sky* is a prime example.

At the outset, in the opening sequence, there are hints that the action takes place in an alternative world with another historical framework, one that is more fully evoked in the subsequent title sequence. As the pirates storm through the ship, for instance, we see that it is a kind of luxury liner of the sky. There are men and women in ballroom attire, who, naturally, scream and scatter as the pirates crash by, while shots are exchanged between the pirates and the darkglasses. These are but brief glimpses of something like period dress and manners. Historical evocation is sketchy and obviously subordinate to action. Yet these are dress and manners that evoke a world reminiscent of late nineteenth- or early twentieth-century Europe. Indeed, *Castle in the Sky* is sometimes billed as Miyazaki's *Treasure Island*, and commentaries establish the period look as nineteenth century. The period look comes primarily from period technologies of communication and transportation – as with the outdated telegraph and Morse code used by Muska to call for help. Likewise, the flying ships and machines recall earlier technologies of flight. In the title sequence, we see what Helen McCarthy describes as 'a panoply of magnificently dotted eighteenth- and nineteenth-century flying machines rendered in a graphic style and gentle colour scheme reminiscent of antique prints' (1999: 97).

This is an alternative nineteenth century, however. The outdated communication technologies may or may not be the same as those used in our historical world. And the earlier technologies of flight are logically extended by Miyazaki into a range of possible flying machines – possible, that is, on the basis of those earlier technologies. McCarthy remarks, 'All were designed by Miyazaki himself, and despite their extravagant appearance, all are workable according to the technology on which they are based' (1999: 98). The title sequence thus invents an alternative history of flying machines, one that extends the possibilities of nineteenth-century technologies.

We know it is intended as a history because the title sequence adopts rather old-fashioned, quaint-looking graphics and colours. There is only one other sequence in the film that uses the same colours and graphics – the one in which Muska tells Sheeta about how the robot fell from the sky. A similar look is adopted for an old photograph. The shift to 'older' styles in graphics and colours is evidently intended to signal historical record rather than personal memories

(which are rendered in the same colours and graphics as the rest of the film, as with Sheeta's memories of her village). Thus, with its evocation of outmoded graphics, the title sequence establishes the back story for the story about Sheeta and Pazu, as a history. Indeed, it is the transformation of the back story into history that lends *Castle in the Sky* its epic quality.

The title sequence opens with an image of the wind personified: a cloud with a woman's face blowing the wind. This first and most bucolic image is accompanied by one of a person standing alongside a human-sized windmill. Subsequent images show humans' progress in harnessing the power of the wind. Wind is harnessed to power machines that dig deep into the earth. Then humans – or, rather, men, it would seem – conquer the skies with ever grander and more elaborate flying machines. Finally there are vast flying castle cities, islands in the sky. This triumph is followed by disaster. There are indications of a great storm, images of dark clouds and lightning followed by a flying city in ruins on the ground. Streams of people pour from the fallen castle. And, as if coming full circle, we return to the shepherd girl next to the windmill designed to pump water, a girl who seems to be Sheeta.

In the title-sequence history, the source of power for the flying castles is not specified. Indeed it is misrepresented as giant propellers, as if the authors of this history could not understand the flying stone. Subsequently in the film, we learn more of this history: pure crystals of flying stone were mined from the earth and used to power the castles in the sky. Moreover, we learn that these castles, as the term *shiro* implies, are indeed flying fortresses, military installations in the sky. While the title sequence hints at these possibilities, its history remains deliberately sketchy, incomplete. The appearance of flying castles is situated as yet another stage in the development of men's ability to harness wind-power. And the fall of the castles in the sky is caused by storms rather than by apocalyptic wars. The sequence delivers a history so broad and oblique as to be mythical – the 'natural' rise and fall of a civilization. It is a natural history that has to be relearned in the course of action in the film world – in an alternative nineteenth century.

In the course of the film, together with Sheeta and Pazu, we learn that the flying castles were of a highly advanced civilization – highly advanced in military technological terms – that had destroyed itself some seven hundred years earlier. The film's alternative nineteenth century is channelling its enthusiasm for technological progress and power into the quest for the ancient civilization's source of power, to which Sheeta's flying stone provides the key. This, then, is a post-apocalyptic nineteenth century – a nineteenth century in which technological progress does not move forward but loops backward. And the title sequence prepares us for a circular story, too – from simple to complex to simple, from a human scale to a gargantuan, monumental scale, and back to a human scale.

This loopy historical framework is reminiscent of Miyazaki's prior film, *Nausicaa of the Valley of the Wind*. Both adopt a post-apocalyptic stance in order to question the uses of technology for domination and destruction. Not only does

the advanced technology lie in the past, but the present of this post-apocalyptic world appears to be located in our own past. In *Castle in the Sky*, the use of an alternative nineteenth century thus produces floating or hovering history, which gives all the signs of historical periods and periodization yet only in order to confuse their temporal order, to confound a sense of historical progression.

Thus *Castle in the Sky* offers its critique of our received technologies and our ideas about them. With its period-extrapolated wacky machines, it seems to seek some alternative to our received technologies. Yet, in the film, it is not so much received technologies themselves that prove troublesome. It is the way they are used and imagined, and how they are handed down and received. In brief, it is a question of how technologies are narrativized. The villain to be defeated is not only Muska but also what he represents: a nineteenth-century-derived faith in technological advances as the basis for progress. What Miyazaki calls into question is a totalizing narrative about technological progress. This is an issue also evoked by Napier (2001b) in an essay on *Princess Mononoke* that calls attention to the ways in which Miyazaki's film forces viewers to address myths about progress. What concern me, however, are the ways in which Miyazaki's problem with technology becomes one of narrativization, comprising both genre and history and form.

As we have seen, at the level of genre and narrative, Miyazaki calls into question the male adventure story, because it is totalizing in its logic of progression and resolution. With *Castle in the Sky*, he delivers an action-adventure plot that moves swiftly and relentlessly forward. And *Castle in the Sky* imparts a greater sense of resolution than subsequent films such as *Kiki's Delivery Service* or *My Neighbour Totoro*, due to the prominence of the boy's adventure story. Nevertheless, *Castle in the Sky* centres on an enigma, one that entails learning about the past in order to move forward. As a consequence, the story tends to loop back into the past, not just into the backstories of the heroes, but into the entire history of their world. It advances and retreats, advances and retreats. It circles. And, true to his dislike of complete resolution, Miyazaki does not resolve the enigma totally. Similarly, the temporal loops inscribed by the post-apocalyptic setting make it impossible to sustain any simple narrative about scientific or technological progress. In sum, Miyazaki resists a totalizing narrativization on both fronts – genre conventions and teleological history – by centring on an enigma.

This style of enigma-centred post-apocalyptic narrative could be styled 'hermeneutic', because it moves in circles between past and present in an attempt to resolve the problems of present. But these are only partially and temporarily resolved. In fact, there is no narrative solution to the problem of narrativization, for a simple and total solution would merely repeat the problem. And so the question about alternatives to received technologies returns, with greater precision: are there any alternatives to the masculine narratives of technological progress with their impulse toward domination and destruction of nature?

Castle in the Sky, centred as it is on the flying stone, directs our attention to the

possibility of alternative sources of energy or power. The flying stone is so magical yet strangely natural, with its unexplained luminosity and resonance across great distances. It is as if the magnetism of the loadstone of the Laputa in *Guilliver's Travels* (one of Miyazaki's many intertexts) were allied with luminosity. Its wonders seem to promise a magical alternative, at least initially. Ultimately, however, the flying stone proves as open to mundane abuse as any other power source. Miyazaki does not opt for a magical solution. Still, the wondrous promise remains, and the quest circles around the possibility of an alternative energy source. This is a quest that cannot be fulfilled with an actual material (coal, oil, gas, uranium or such) for these are subject to possession and allow for domination and social imbalance. If the flying stone holds our imagination, it is because it is less tangible, manipulable. Yet, because it can be mined, refined or otherwise manipulated, it can be held, controlled, mastered. The alternative could only be an energy that cannot be thus held and wielded. There is only one such form of energy that Miyazaki always supplies in abundance: the wind.

Of particular importance is that the wind resists narrativization. It is not the object of the treasure hunt, it is not the goal of the epic quest. Nor is it the site of a hermeneutic enigma like the flying stone. Rather it is the vehicle for all the film's activities – vehicle in the double sense of medium and transport. The wind carries along everything and everyone, and, even when destructive, it is a positive, almost vital force – an animating force. It is worth recalling that the word animation itself derives from 'animus' or wind. The wind is the vitality of nature itself. Or rather, I should say, of nature herself. For, in the title sequence, the wind is given a face, and that face is decidedly a woman's. The wind is personified and rendered quaintly as a female deity, blowing the air and clouds. The feminization of the wind should come as no surprise. After all, does Miyazaki not introduce the feminine in order to break with male genres? Analogously, an animistic feminine force is evoked to break with masculine narratives of technological progress.

If *Castle in the Sky* is seen as Pazu's story, this is the effect of the wind: to temper and redirect his boyish enthusiasm for machines, away from domination and destruction, towards something safer and gentler, something that follows nature rather than battles it – something like the glider or the windmill. For, if there are real alternatives to received technologies in *Castle in the Sky*, they are those that ride and channel the wind and that also function on a human scale – the glider and the windmill. The film delights the imagination with flying machines of all shapes and sizes, and lures the viewer to a gargantuan castle in the sky. Yet it destroys the possibility that such wondrous achievements present real social alternatives. For those technological achievements are based on power sources that can be held. The implication is that forms of power that can be held invariably allow someone or some group to hold that power over others. Power sources that can be acquired or held also entail a plundering of nature, a conquering of the natural world. Ultimately, both the airship technologies and the flying-stone technologies lead to domination and destruction.

The glider, however, entails the least degree of technology for flying. Nor can its power source – wind and human ability – be mined and owned. Its pilot follows the wind rather than controls it. And it is, of course, the glider that saves Sheeta and Pazu in the end. We last see them gliding into the sunset.

Narratively and conceptually, Miyazaki's solution to the question of alternatives to received technologies with their destruction and domination may seem rather banal. Technological creations, such as the robots, do not in and of themselves dominate and destroy. It is how they are used – whence the touching scenes of robots who protect nests, befriend little animals and tend gardens versus the frightening scenes of the same robots laying waste to the countryside. And there are hints of a lesson about getting back to nature. What is more, the entire story seems to linger on the possibility of a world before development – at once sexual and technological development. As a message or moral injunction, this may indeed seem rather banal.

Things are more complicated, however. Development will occur; in fact, it has already occurred. Moreover, the eventual misuse of technologies seems to lie latent in their power sources. Thus, at the same time that Miyazaki seems to mistrust technology in general, he moves away from a simple question about whether technology is good or bad in and of itself. He turns to the problem of power sources or energies. *Castle in the Sky* is nothing if not a search for another energy. Miyazaki's effort is then to minimize and redirect technological development on the basis of a different source of energy. And this is where his responses become distinctly *anime-ic*.

Let me review some of the prior points to explain his *anime-ic* responses.

The way in which lines are erased to clean up sketches augments the weightless potential of animated figures. With the figure of Sheeta, Miyazaki begins to explore and emphasize this basic potential in animation. His is an aesthetic take on a technique used to diminish the viewer's awareness of 'jitter' in the movement of animated characters – a jerkiness or skippiness that becomes especially pronounced in limited animation when intermediate stages of movement are omitted. By emphasizing weightlessness, Miyazaki can at once embrace the simplicity of animated characters and diminish the machinic effects implicit in animation. In other words, he uses one potential of animation (weightlessness) to lessen another potential (jitter) that arises in limited animation. Whereas there are other *anime* makers who embrace jitter in narratives that explore automatons, cyborgs, digital technologies and such, Miyazaki strives to diminish jitter while remaining true in the lineage of limited animation. In sum, art is deployed to minimize machinic effects, and to re-receive technologies. This effort is at the very heart of *Castle in the Sky*.

In the film, Sheeta's weightlessness is given a causal and hence narrative explanation. Her seemingly magical ability to float down from the skies is attributed to the flying stone, to her use of it. Yet the flying stone does not allow her to fly, it merely prevents her from falling. And she uses it unconsciously. Floating must be

more conscious and active. It is in flying that Miyazaki activates weightlessness. But not any sort of flying will do. The best machines of flight are those that demand the least technology, the least degree of machine. And so, when Sheeta takes to the skies with Pazu, it is without the stone, in a glider, on the winds. In sum, flying is where Miyazaki explores minimizing technology by maximizing a 'natural' energy that lies potential in *anime*-ic expression. It is as if a particular potential of the medium has become the message. It is as if an aesthetic response to technical limitations within animation has unfurled an ethical message about limiting technology.

Moving drawings

I previously mentioned some features of Miyazaki's films that seem to impart a cinematic feel. As writer- animator-director, for instance, he attends to every detail of his films. This ensures an overall consistency in line, tone and contour in his works. And his attention to detail in the construction of backgrounds allows for panoramic sweep as well as focus on details. This gives the impression of a vast, detailed, consistent world for action. He uses viewing positions that appear to simulate camera angles in cinema. But what of movement?

Usually, to produce characters who seem to move like people in live-action film, full animation is used, and as many as twelve frames per second are drawn. Even with the most expensive animated films, however, budgets are never big enough to 'rotoscope' every action, and so there are built-in limitations – not to mention the limitations of the artist's hands and eyes. Still, although his budgets are relatively modest by Hollywood standards, Miyazaki could probably afford to pay greater attention to the full animation of characters' movements, if he wished. He seems content, however, with a certain degree of fluidity, grace and plausibility in movement. But he does not strive for the anatomical and facial precision of movement so important in other forms of animation. He prefers to use more simplified and cleaned-up sketches in front of detailed backgrounds. The simplification of characters lends a sense of grace and fluidity to movements that might otherwise appear choppy or jerky. This preference also allows him to use some of the strategies of limited animation even as he minimizes its machinic effects.

Nonetheless, the consequent weightlessness creates another problem, a problem with depth. For seeing simplified characters against detailed backgrounds works in two directions. On the one hand, it could suggest depth, especially if the colours and lines of the background cel are more subdued than those of the character cel. On the other hand, the characters may seem to float, to come unmoored from their environment. That is, depth is implied but remains incipient if the relation between foreground and background is not smoothed out, not well composited. Backgrounds may be painted using art techniques that impart a sense of depth, but then the simplified characters still look flat with their solid outlines and scant modelling. One is aware of a gap or difference between

the foreground and background layers. It is as if foreground and background constituted different dimensional layers rather than aspects of a single three-dimensional world.

The multiplane camera, and more recently multilayer compositing, was designed to overcome this problem of depth between foreground and background. Yet, even with the multiplane camera, there are moments that reveal the strange dimensionality of layers of slotted drawings. In *Castle in the Sky*, for instance, when Sheeta and Pazu arrive on Raputa and look over the edge of the cliff, the viewing position shifts and one becomes aware of sliding layers. This is always a problem with multiple planes. As one's viewing position moves, the relation between different planes transforms – but not in the manner of 'real' depth (for which live-action cinema remains the norm). This is because proportions do not change in accordance with position.

The problem – if it really is a problem – might be resolved with computer-generated spaces in which the viewing position moves in depth without the visual artifacts that occur with layers. This is supposed to make animation feel more like cinema. But it should be pointed out that cinematic depth is no less constructed than depth in other arts. It simply has a greater hold on our sense of what real depth looks like.

In any event, Miyazaki addresses the problem of depth in a very different manner from live-action cinema. On the one hand, he finesses and conceals the problem. As already discussed, he tends to avoid scenes with movement in depth, while using panoramic establishing shots. In addition, the background landscapes are drawn with suggestions of depth but these are not so pronounced as to appear incommensurable with the character figures, which are but slightly modelled with shadowing. On the other hand, he puts the obstacle to work, he makes of it an opportunity. He does this by calling attention to surface movement. He exploits the potential awareness of a gap between foreground and background by putting the foreground layer in motion. This is especially true with scenes of flying. As we have seen, the kind of flying he prefers is a manner of gliding. With gliding he can bring into play the effects that arise from the sliding of multiple layers.

Miyazaki continually makes such storyless effects central to his narratives: just as weightlessness becomes integral to his story, so he uses gliding to activate the sliding of layers within his narratives. Thus he makes the non-narrative potentials of his art integral to narrative. Indeed, what makes Miyazaki interesting is that he thinks and works with storyless elements, building his stories out of them.

It is ironic that this gliding/sliding solution is what imparts a cinematic scope and feel to his films. For what feels cinematic is the fluidity and mobility, not only of character but also of viewing position – in conjunction with some of the features outlined previously, such as detail, consistency, panorama. Yet this viewing mobility is in many ways quite different from the cinematic, at least as it is conventionally conceived.

Thus, I return to the 'animation by train' scenario evoked at the outset. I

mentioned then that the animation by train scenario entailed another kind of movement as well – ‘induced movement’ in which the traveler feels change in relative speed and motion, as when two trains pass or when the passage of the train through a tunnel serves to animate figures on a wall. As we have seen, cel animation frequently resorts to the movement of animated figures over a background. Relations of foreground and background are easily emphasized, sometimes intentionally, sometimes not; and, even though there are definite visual cues to orientate the direction of movement, at times it is hard to say which is moving, the foreground figure or the background landscape. It is like those scenes of car travel in B-movies, in which the car stands still while the scenery moves past the car – a failed attempt to create an illusion of travelling, failed largely because the car appears to have depth while the scenery does not. Sometimes the disjuncture is so obvious that the effect becomes humorous.

This depth disjuncture can be especially pronounced in *anime*. In *anime* one frequently detects the slippage between planes, especially between foreground and background. Even when multiple layers or planes are used, the sliding of one plane over, under or through another plane remains part of the visual experience. For instance, one sees in profile a girl running down a road with a forest in the background – as in some of the scenes in *My Neighbour Totoro* in which Satsuki runs about in search of her younger sister Mei. It is hard to say which is moving, the girl or the forest, the girl or the clouds in the sky. In fact, the girl is running in place, and her plane – the cel on which she is drawn – is moving in relation to the forest plane or sky plane. Naturally, one is supposed to see the girl running forward. Or so it seems initially. Yet it is often equally easy to see the forest sliding back. One sees the sliding of surfaces over surfaces. Maybe Satsuki’s search, for instance, is not so straight forward, visually or narratively – does the slippage between planes underscore the futility of her search, imparting a sense that, in fact, she is getting nowhere?

These kinds of scenes – in which an animated figure is pulled across a background – run counter to certain ideas about how animation should work. In a comparative account of *anime*, Disney and the Fleischer Brothers, Raffaelli observes that ‘the Japanese style did not respect the rules dictated by that master of animation, Norman McLaren (according to whom one must not move the drawing but draw the movement)’ (1997: 127). Although it is difficult to speak of *anime* in general (since there are many *anime* styles and formats), there is a marked tendency to move the drawing and to emphasize the slippage between layers. And this is precisely what Miyazaki does, as noted previously.

It is not surprising then that Miyazaki differentiates his work from animation: he uses the term *manga eiga* or ‘manga film’ (1982: 151–2). He specifically refers to *Castle in the Sky* as a manga film rather than animation (1984: 395). One way to think of this is as a distinction between an animation that focuses on animating characters (as with Donald Duck or Mickey Mouse, to use Miyazaki’s examples) and an animation that aims for a cinematic mobility with *manga*-like

drawings. In sum, it could be thought of as a distinction between drawing movements and moving drawings. Miyazaki, needless to say, wishes to emphasize the mobility possible by means of moving drawings.

One effect of this sliding of figures across backgrounds, and slipping of backgrounds under figures, is an induced movement of the spectator – like the feeling that the platform, not the train, is moving. It is this that gives one the sense that, although one sits still as one watches, one somehow moves with respect to the images. This may be achieved with camera movements as well, and yet the effect is unlike that which arises in cinema. For the effect comes from the sliding of one plane over or under another – with a sense that foreground and background are in (relative) motion. The sense of induced movement even becomes vertiginous, because, in addition to one's own sense of movement, one sometimes has the sense that the background is in motion, and sometimes the character. The entire world itself seems to enter into motion.

Cinema typically strives to reduce the sense that the background is in motion. At least this is true of what is often dubbed 'classical' cinema, what Noel Burch calls, in some of his later essays on early cinema, an 'institutionalized mode of representation' (Burch 1990). Such a mode of representation generally goes to great lengths to create the illusion that the figures move, not the world around them. Burch shows that the institutionalized mode of representation had to override, undermine and rework many of the surface effects of early cinema in order to produce a sense of 'motionless voyage' into the illusory world depicted on the screen. This motionless voyage – an almost Cartesian sense that the world is laid out before us for us to move into and act upon, as on a grid – became second nature to cinematic representation, at least in what is thought of as classical cinema.

This is why viewers may well laugh at those scenes in B-movies in which the world appears to be streaming past car windows. For such scenes are, probably unintentionally, at odds with institutionalized codes of cinematic perception of movement. Viewers might even feel that the scenes of traveling scenery go against some natural sense of movement. There is no evidence, of course, that the correct or natural way of perceiving movement is one in which the mover moves through or into the world. On the contrary, one could argue (and many have) that we truly perceive the world coming at us. Which would be rather like those scenes in *anime* in which the viewer follows someone running from behind, and the world seems to rush at and stream past the one who runs. The world seems to move, not the runner or viewer. Is it a subject that moves? Or the world? Or do both move at once? In such moments of induced movement, it would be very difficult to insist on a strict division between spectator and object.

Rather than try to argue that one sense of movement is more natural or correct than another, I should simply like to point out that there are potential differences between cinema and animation in their presentation of movement – different qualities and experiences of movement. Nor do I wish to imply that animation is

incapable of presenting a cinematic quality of movement or that animation effects are impossible in cinema. (In fact, as I mentioned previously, one could think of these sliding layers as analogous to what is referred to as 'internal montage', that is, a montage that is internal to the shot that breaks down the distinction between montage and shot.) My aim is to call attention to the effects of induced movement made possible by composition with mobile planes, to the possibility for induced movement and an experience of a 'movemented' world. This is a potential that is easily emphasized in animation, one that became prevalent in *anime* as Japanese animators found ways to present movement without relying on very expensive full animation. Miyazaki fully realizes this potential in his *manga* films.

Miyazaki is also adamant that his films are children's films. In the draft plan for *Castle in the Sky*, he sees the film as geared to a younger audience than *Nausicaä* as well as a return to the *manga* films that he saw as a child. His emphasis on children's films and childhood experience is clearly a way to explore a certain potential of the animated film. It seems that, with the children's *manga* film, he seeks something almost primordial. That is, he is interested in something that is developmentally earlier or prior. He strives for a space and time that is prior to sexual and technological development, which promises access to an earlier, innocent nature – but one that is nearly impossible to locate or realize. Miyazaki's 'prior to' also seems to be 'prior to cinema'. Or, more precisely, it seems to be 'prior to cinematic forms of movement and cinematic subjects'. This demands a brief digression into some discussions of early cinema.

Tom Gunning, for instance, speaks of early cinema as a particularly modern form of entertainment, one that involves a succession of thrills and distractions limited only by viewer exhaustion. He uses a famous example – the reaction of early film audiences to Lumière's *Arrival of a Train at the Station*, a film which apparently created something of a sensation due to the panicked reaction of the audience as the train rushed at them. Audiences were said to scream and flee in terror. Gunning links this to what Schivelbusch has called panoramic perception, in which the passenger 'no longer belongs to the same space as the perceived objects; the traveller sees the objects, landscapes, etc., *through* the apparatus which moves him through the world' (Schivelbusch, cited in Gunning 1995: 126).

One possibility that arises from this 'seeing through the apparatus that moves through the world' is the motionless voyage analyzed by Burch. The spectator becomes one with the movements of the camera and thus travels into a filmic world. It is a voyage that merely follows the apparatus and observes actions in this other world – a going along for the ride – what Lynne Kirby (1997) calls the 'spectator-passenger'. One might also think of this alliance of spectator and vehicle in terms of the production of an 'apparatus subject' or a 'machinic subject' that moves in the world in a new way.

In a film like *Castle in the Sky*, there is something like panoramic perception. The film allows the spectator to travel into an imaginary world, an alternative nineteenth-century, in a truly panoramic fashion. The spectator moves around in

this world as if she or he belongs to a different space from the perceived landscapes and objects. But what is the apparatus through which she looks? On the one hand, it seems that flying machines of all kinds – even a flock of birds that wheels and soars over the valley – allow for a soaring, panoramic view of things. One sees from the eye of things that fly. On the other hand, the viewing position is typically lateral to, alongside, the flying machine. Miyazaki rarely, if ever, presents movement from the viewpoint of the machine. There may be a practical reason for this: I mentioned that there are certain pragmatic considerations with cel animation which make it difficult to present movement in depth – making a lateral view a stronger option. Yet I think that, even if pragmatically dictated, Miyazaki's preference is crucial to our experience of his *manga* films.

Miyazaki's use of flying affords a panoramic perception, yet he resists the viewing position that allies spectator and machine. He avoids the sensation of becoming a flying machine. When questioned in an interview about his interest in flight, he replies that he personally likes planes and images of flight; but then he notes that, even though *Castle in the Sky* is set in the sky, there are not so many scenes of flying. And he remarks that, in the scenes with flappers, the sensation is like that of a bicycle, of running rapidly over the ground (1986: 479). Recall too that Pazu and Tombo, his mechanically minded boys, build flying machines out of bicycles. In other words, when Miyazaki does render motion from the viewing position of the amalgamated machine-subject, he opts for the simplest, earliest, most 'natural' technology possible – not train, car or plane, but bike or glider – a sensation like running over the ground.

This deliberate limitation is consonant with a general message about minimum-impact, human-scale technologies that do not involve wasting and battling over resources. It also has a profound impact on panoramic perception. There is indeed a sort of panoramic perception, which imparts a cinematic feel to his *anime*. Yet this is a limitation on technology that becomes a form of ethico-aesthetic expression distinct from cinema. This limitation comprises not simply his choice of machines (gliders, bicycles and windmills). It involves a strict adherence to, and exploration of, the potentials of 'limited' cel animation (and the fundamentals of filmic expression). On this level, the resistance to technology implies a strategic avoidance of visual technologies of movement-in-depth. The result is an aesthetic emphasis on weightlessness, which is then activated in flying, in gliding – from the movement between planes rather than the animation of figures – in brief, induced movement.

Induced movement could be thought of as a primordial form of panoramic perception. It is a movement that seems to place the viewer in a different space from the objects perceived. It promises to separate out a viewing machine-subject that travels over and above the motionless world – to impart a subjective depth. Yet it does not. By creating relative motion between the world and the spectator, induced movement sets the surfaces of the world in motion. As a consequence, the world becomes a bit too dynamic to be perceived panoramically; it is sensed

but not quite objectifiable (in the sense of forming stable points of reference). Miyazaki stresses this primordial moment by turning to bikes and gliders, by playing with the sensation that the ground moves at you, past you, as you run along. There are movements and sensations of movement, and the viewing position glides or runs or scans this world, but never entirely emerges from it.

I would challenge, however, the conclusion that Miyazaki's preference for the sensation of induced movement is simply an evocation of childhood sensations and experiences. Obviously, at every level in his films, there is a strong tendency to seek something prior, earlier, childlike, innocent, natural or primordial. Yet, as the example of *Castle in the Sky* suggests, this 'prior' only arises 'after' (after development, experience, technology and so on). His childhood is an adult's childhood; his earlier technologies arise in a post-technological world and history. Likewise, *manga* films like *Castle in the Sky* do more than reconstruct children's adventures, fantasies and experience. Miyazaki's play with weightless figures and sliding surfaces induces motion in the world and in spectators, evoking a kind of 'prior' to panoramic perception – prior to classical cinema, that is.

Yet, as with the 'prior' generally in Miyazaki, this primordial panoramic perception is as much 'after' as it is 'before' cinema. Miyazaki's eye is not merely that of earlier technologies. His apparently primordial perception is futural perception as well. The *manga* film is as much new medium as it is early cinema. It involves an experience of scanning and seeking information as much as one of floating, gliding and soaring. For Miyazaki's eye is not only that which glides like a bicycle, soars like a glider or floats on the wind. His eye is also that which scans images, which scans between images, which thus scrambles the relation of montage and shot, which then seeks correspondences based not on resemblances but on energies and their resonances – and which feels oddly like an intensification of the journey begun with the high-speed electric train.

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References

- Berndt, Jacqueline (1999) 'Miyazaki's *Mononoke hime* and traditions in *nihonga* landscape', paper presented at the Organization for Asian Research Annual Meeting-in-Conjunction, in Washington, DC.
- Burch, Noel (1990) *Life to Those Shadows*, Chicago: University of Chicago Press.

- Gunning, Tom (1995) 'An aesthetic of astonishment: early film and the (in)credulous spectator,' in Linda Williams (ed.) *Viewing Positions: Ways of Seeing Film*, Rutgers, NJ: Rutgers University Press, pp. 114–33.
- Ivy, Marilyn (1993) 'Formations of mass culture', in Andrew Gordon (ed.) *Postwar Japan as History*, Berkeley, CA: University of California Press, pp. 239–58.
- Kirby, Lynne (1997) *Parallel Tracks: The Railroad and Silent Cinema*, Durham, NC: Duke University Press.
- Kitano Taiitsu (1998) *Nihon anime shigaku kenkyū josetsu* (An introduction to the historical study of Japanese animation), Tokyo: Hachiman shoten.
- Klein, Norman M. (2000) 'Animation and animorphs: a brief disappearing act', in Vivian Sobchak (ed.) *MetaMorphing: Visual Transformation and the Culture of Quick Change*, Minneapolis, MN: University of Minnesota Press, pp. 20–40.
- Kotani Mari (1997) *Seibō Evangelion: A Millennialist Perspective on the Daughters of Eve* (Immaculate Mother Evangelion), Tokyo: Magazine House.
- McCarthy, Helen (1999) *Hayao Miyazaki, Master of Japanese Animation: Films, Themes, Artistry*, Berkeley, CA: Stone Bridge Press.
- Manovich, Lev (2001) *The Language of New Media*, Cambridge, MA: MIT Press.
- Matsumoto Reiji (1996) 'Interview' (with Takayuki Karahashi), in *Amine Interviews*, San Francisco: Cadence Books, 1997, pp. 150–8.
- Miyazaki Hayao (1982) 'Animation to manga eiga' (Animation and the manga film), in *Shuppatsuten 1979–1996* (Points of departure 1979–1996), Tokyo: Studio Ghibli, pp. 150–8.
- (1984) "'Tenkū no shiro Raputa" kikaku gen'an' (Original plans for 'Castle in the Sky Raputa'), in *Shuppatsuten 1979–1996* (Points of departure 1979–1996), Tokyo: Studio Ghibli, pp. 394–7.
- (1986) 'Kojinteki ni wa "Naushika" kara no renzokusei ga arundesu' (Personally, there is continuity from 'Nausicaa'), in *Shuppatsuten 1979–1996* (Points of departure 1979–1996), Tokyo: Studio Ghibli, pp. 477–85.
- (1989) 'Misshitsu kara no dasshutsu' (Escape from the closed room), in *Shuppatsuten 1979–1996* (Points of departure 1979–1996), Tokyo: Studio Ghibli, pp. 353–65.
- (1984–94) 'Excerpts: Miyazaki on heroines', <http://www.nausicaa.net/miyazaki/interviews/heroines.html>
- Morris-Suzuki, Tessa (1988) *Beyond Computopia: Information, Automation and Democracy in Japan*, London: Kegan Paul.
- Murakami Takashi (2000) *SUPERFLAT*, Tokyo: MADRA.
- Nagase Tadashi (1999) *Yokubō no mirai: kikaijike no yume no bunkashi* (The future of desire: cultural records of the dream of machinic devices), Tokyo: Suseisha.
- Napier, Susan (2001a) *Anime: From Akira to Princess Mononoke*, New York: Palgrave.
- (2001b) 'Confronting master narratives: history as vision in Miyazaki Hayao's cinema of de-assurance', *positions* 9(2): 467–93.
- Okata Emiko (1997) 'Miyazaki anime no hiroin no keifu' (The lineage of Miyazaki's heroines), *Kinema junpō* 1233(2 September): 45–9.
- Raffaelli, Luca (1997) 'Disney, Warner Bros and Japanese animation', in Jayne Pilling (ed.) *A Reader in Animation Studies*, Sydney: John Libbey, pp. 112–36.
- Saitō Minako (1998) *Kōtten ron: anime, tokusatsu, denki no hiroin-zō* (On 'The woman in red': anime, special effects and biographical heroine images), Tokyo: Village Center.
- Schivelbusch, Wolfgang (1986) *The Railway Journey: The Industrialization of Time and Space in the 19th Century*, Berkeley, CA: University of California Press.
- Schodt, Frederic (1996) *Dreamland Japan: Writings on Modern Manga*, Berkeley, CA: Stone Bridge Press.
- Studio Ghibli (1984a) *Kaze no tani no Naushika* (Nausicaa of the valley of the wind), Ghibli ga ippai Collection 3, Buena Vista Home Entertainment.

- (1984b) *The Art of Nausicaä*, Tokyo: Tokuma shoten.
- (1986) *Tenkū no shiro Raputa* (Castle in the sky Raputa), Ghibli ga ippai Collection 6, Buena Vista Home Entertainment.
- (1988) *Tonari no totoro* (My neighbour Totoro), Buena Vista Home Entertainment.
- (1989) *Majo no Takkyūbin* (The witch's delivery service), Buena Vista Home Entertainment.
- (1997) *Mononoke hime* (Princess mononoke), Ghibli ga ippai Collection, Buena Vista Home Entertainment.
- (1999) *Princess Mononoke: The Art and Making of Japan's Most Popular Film of All Time*, New York: Hyperion.
- Takahata Isao (1999) *Jūni-seiki no animēshon: kokuhō emakimono ni miru eigateki animeteki naru mono* (Animation in the twelfth century: film-like and anime-like elements seen in our national treasures, picture scrolls), Tokyo: Tokuma.
- Takayama Hiroshi (1997) 'Animetingu na mono' (Things animating) in *Eureka tokushū: Miyazaki Hayao no sekai* (Eureka special issue: the world of Miyazaki Hayao) 29(11): 54–9.
- Tatsumi Takayuki (1993) *Japanoid senden: gendai Nihon SF wo yomu tame ni* (A manifesto for Japanoids: for the reading of contemporary Japanese SF), Tokyo: Hayakawa Shobō.
- Tsuneishi Fumiko (1997) 'Tenkū no shiro Raputa: tenkū no nokosarejima' (Castle in the sky Raputa: the abandoned island in the sky), in *Miyazaki Hayao*, Filmmakers 6, Tokyo: Kinema junpō, pp. 126–9.
- Ueno Toshiya (1998) 'Anime to wa nani ka' (What is anime?), in *Kurenai no metaru suutsu: Anime to iu senjō* (Metal Suits, the red: wars in animation), Tokyo: Kinokuniya shoten.
- Wells, Paul (1998) *Understanding Animation*, London: Routledge.
- Yamaguchi Katsunori and Watanabe Yasushi (1977) *Nihon animation eiga shi* (A history of Japanese animation films), Osaka: Yubunsha.
- Yoshiyuki Tomino (1993) 'Interview' (with James Matsuzaki and Frederic L. Schodt), in *Amime Interviews*, San Francisco: Cadence Books, 1997, pp. 8–12.
- (1999) *Yoshiyuki Tomino zenshigoto 1964–1999* (Complete works of Yoshiyuki Tomino 1964–1999), Kinejun Mook Special Issue, Tokyo: Kinema junpō sha.
- Zardonella, Catherine (1999) 'Get real', *New Scientist* 22213 (20 November): 41–5.

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