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*Animation* 2011 6: 25

DOI: 10.1177/1746847710391226

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# Rethinking Plasticity: The Politics and Production of the Animated Image

Animation:  
An Interdisciplinary Journal  
6(1) 25–38  
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DOI: 10.1177/1746847710391226  
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## Abstract

Writings on animation have often noted the plastic quality of the image: objects stretch, squash and change forms. Such discussions of the *plastic* quality of animation tend to equate plasticity with the appearance of the image. This article proposes a rethinking of plasticity in animation, suggesting that it is not simply an attribute of the finished image, but an aspect of the material conditions of its production. Introducing the work of Imamura Taihei and Hanada Kiyoteru, two leftist Japanese intellectuals who wrote on Disney animation during the 1940s and 1950s, and contrasting their work with the writings of their European counterparts, this article will suggest that these Japanese thinkers focus our attention on the importance of Fordism in the production of Disney animation. The work of Imamura and Hanada enables us to critically approach plasticity in animation in terms of the material conditions of the image production within Fordism, thus enabling us to consider plasticity at the level of the medium as well as that of labor.

## Keywords

Disney animation, Fordism, Frankfurt School, Hanada Kiyoteru, image production, Imamura Taihei, plasticity, Sergei Eisenstein

Among the many theoretical issues raised by recent studies of animation there is one issue in particular that poses an intriguing conceptual challenge: the question of plasticity. The plastic or protean quality of animated images and the attractive power of their metamorphoses have been extensively discussed by many leading film and animation scholars, including Vivian Sobchack (2008, 2009), Scott Bukatman, and Norman Klein. Interestingly, and indeed understandably, the works that address these issues tend to focus on the plastic potential of the image as it appears on the screen. While the question of plasticity is multifaceted, and certainly cannot be reduced to one single attribute or historical context, it is nonetheless useful to animation studies to explore new ways of thinking about this concept of plasticity beyond the realm of the image itself. Starting from

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this premise, this article will undertake a speculative meditation on the concept of plasticity as it is refracted through a particular set of writings on early Disney animation films.

The tendency to focus on the plasticity of the animated image is grounded in a long history of animation studies. The paradigmatic text in this regard is arguably Sergei Eisenstein's study of Walt Disney, written between 1941 and 1946. In this study, Eisenstein developed the concept of 'plasmaticness' to theorize the attraction of fantastic and often elastic figures that frequent the world of Disney animation. By the term 'plasmaticness' Eisenstein meant two things: first, the protean quality of 'the protoplasm', or the organic substance that is capable of assuming any form, and second, the elasticity of drawn figures that can stretch, squash or twist into impossible contortions. Many of Disney's animated films exhibit both dimensions of plasmaticness. According to Eisenstein, in the world of early Disney animation between the 1920s and 1940s, inorganic objects and animals dance to rhythmic tunes, stretch and twist their bodies, change their shapes, and resist the laws of nature. For example, in reference to the early black and white Mickey Mouse films, Eisenstein writes: 'There is the steamboat that folds logs like pastries; there are the hotdogs whose skins are pulled down and are spanked; there are the piano keys which bite the pianist like teeth, and much, much more' (2006: 94). As this passage suggests, Eisenstein used his concept of 'plasmaticness' to describe the kind of fluidity of identity and malleability of form frequently found in Disney animation.

The heritage of the Eisensteinian conception of plasticity of the image informs much contemporary writings on the animated image, from discussions of cel animation to theorizations of digital morphing.<sup>1</sup> While it is necessary and indeed important to approach plasticity in animation at the level of the image itself, situating this question of plasticity more broadly would open up certain theoretical and political possibilities. Drawing on the insights of two leftist Japanese film theorists' work on Disney animation written in the 1940s and 1950s,<sup>2</sup> this article proposes extending the discussion of cel animation's relation to plasticity beyond the phenomenological *perception* of the image to the material process of *producing* the image. In order to assist this reorientation, I will turn to the work of Japanese theorists Imamura Taihei (1911–1986) and Hanada Kiyoteru (1909–1974).

Before I engage with Imamura and Hanada's readings of Disney, however, I would like to take a brief detour through the reflections on Disney by some European Marxist intellectuals writing contemporaneously with (or slightly before) Imamura and Hanada, namely Walter Benjamin (1892–1940), Theodor Adorno (1903–1969), Max Horkheimer (1895–1973), and Sergei Eisenstein (1898–1948). This detour will offer a useful comparative historical perspective from which to address the importance of considering animation's plasticity at the level of image production. Putting the hitherto little-studied work of these Japanese thinkers in dialogue with the well-known work of European critical theorists will allow us to develop a dialectical understanding of plasticity that is equally applicable to both the phenomenological perception of animated images and to the material conditions of their production under the system of Fordism. Disney has a privileged place in this article, insofar as Disney animation is analyzed by the intellectuals whose writings I will discuss. One of the many elements that drew these intellectuals to Disney was the link between Disney animation and Fordism, which I will interpret through the concept of plasticity.<sup>3</sup> To be sure, this is not the only reason why these intellectuals took Disney into consideration. Disney was a prominent animation studio at the time, and at the vanguard of animation production during this period. Indeed, writers such as Imamura viewed Disney as the exemplary producer of animation at the time. Nonetheless, it is arguable that these intellectuals' interest in Disney was both fueled and informed by their shared concern with the conditions of life under Fordism. The rise of Fordism, understood here as an intensification of the Taylorist system of organization of labor and the assembly-line style of mass production of standardized goods targeting mass consumers, provides a common historical context to the work of these Japanese and European thinkers.

In offering an interpretation of these intellectuals' writings on Disney, one of the main goals of this article will ultimately be to develop a critical understanding of plasticity at the level of the *material process of production* (i.e. the image-making process) instead of simply treating it as an *attribute of the finished product* (i.e. the appearance of the image itself). In developing this argument, I will do two things: first, I will introduce the insightful discussions of Disney animation offered by Japanese thinkers; and second, I will build on their reflections on Disney animation by relating them to two kinds of material conditions: the medium of animation on the one hand, and the organization of labor involved in the production of animation on the other. In building on their arguments, I will develop a dialectical understanding of the concept of plasticity, a perspective opened up by the recent work of French philosopher Catherine Malabou. Finally, in conclusion, this article will suggest, albeit in tentative terms, how this study of plasticity might shed new light on the contemporary question of the much discussed shift in capitalism from Fordism to post-Fordism.

### The Frankfurt School and Disney

Between the 1930s and 1950s a number of Marxist intellectuals examined Disney animation, using it to articulate their political concerns about capitalism and mass culture. Theodor Adorno and Max Horkheimer, for instance, saw in the figure of Donald Duck the dystopian habituation of the masses to their oppression. As Miriam Hansen (1993) and Esther Leslie (2002) have argued, Walter Benjamin, in contrast, responded to the work of Disney in a manner that contrasts starkly with that of Adorno and Horkheimer. Benjamin saw a utopian potential in the 'globe-encircling' figure of Mickey Mouse, adored by mass audiences around the world (Benjamin, 2002b: 118).

In his 1933 essay, 'Experience and Poverty', Benjamin argued that Disney's animation films offer a compensatory dream to those who were exhausted by the new barbarism of modern industrial life. Mickey Mouse was an embodiment of this compensatory dream to 'people who have grown weary of the endless complications of everyday living', as well as the technologically generated experience of shock (2002a: 735). Benjamin continued to cast Mickey Mouse in a utopian light in a draft of his famous 1936 essay, 'The Work of Art in the Age of Mechanical Reproducibility'. Here Mickey Mouse appeared as a figure of 'the collective dream' that navigated the audience to a shared 'dream world', in which they engaged in the therapeutic act of collective laughter (2002b: 118). The collective laughter provided by the mass cultural product of Disney animation prompted 'a therapeutic release of unconscious energies' and in so doing prevented the future 'outbreak of mass psychosis' (p.118). With its technologically enhanced optical effects cinema was particularly suited to translate 'the individual perceptions of the psychotic or the dreamer' into the 'collective perception' that the audience shared through their collective viewing of films at the theater (p. 118).<sup>4</sup>

Later, in their 1944 indictment of the culture industry, Adorno and Horkheimer accused Disney of being deeply complicit with capitalist regimentation of society: 'Donald Duck in the cartoons and the unfortunate victim in real life receive their beatings so that the spectators can accustom themselves to theirs' (2002: 110). The collective laughter generated by the beating of Donald Duck on screen was not therapeutic, but disciplinary. The masses voluntarily habituated themselves to real life hardships by watching their surrogate character beaten on screen. In the eyes of Adorno and Horkheimer, Disney's animation films were nothing but the 'after-images of the work process' so thoroughly mechanized and regimented under the Taylorist-Fordist mode of production (p. 109). Animation and slapstick comedy films, which once offered genuine resistance against rationalism, had turned into the ideological instruments of mass deception. In an indirect reference to Disney animation, they write: 'The ostensible content is merely a faded foreground: what is

imprinted is the automated sequence of standardized tasks' (p. 109). Adorno and Horkheimer rightly discerned a structural resemblance between Fordism and Disney animation, though they left this resemblance implicit rather than explicit.

By the time Adorno and Horkheimer's critique of the culture industry appeared, Walt Disney had indeed thoroughly integrated the Fordist mode of production and its method of organizing labor into his own company. Disney started his animation business with just a handful of friends and family members in 1923. By 1940 the number of staff employed by Walt Disney Company surpassed 1000, and the company owned 25 buildings. The little artisanal company Disney started with his brother grew into a giant Hollywood corporation, replete with well-equipped production studios. In the course of developing his company Disney directly modeled it after Henry Ford's automobile factory, adopting its strict division of labor, standardized manufacturing process, and assembly-line style of production (Leslie, 2002: 134).<sup>5</sup> The ingenuity of Ford, as Antonio Gramsci put it, was 'to rationalize production and labour by a skillful combination of force (destruction of working-class trade unionism on a territorial basis) and persuasion (high wages, various social benefits, extremely subtle ideological and political propaganda)' (2005: 285). Following Ford's insight, Disney efficiently organized and rigidly controlled his Burbank studios. He offered his workers 'a penthouse with a lounge, soda fountain, sun deck, gymnasium and showers', fostering a collegial environment of collaboration (Leslie, 2002: 134–135). Meanwhile, the whole workspace was strictly regimented to achieve maximum efficiency; workers were isolated in their respective departments and production units. As the company grew larger the division of labor became more precise, and the atmosphere became more impersonal, leading to strikes and layoffs in the early 1940s (Schickel, 1997: 250).

Given Disney's exemplary application of Fordism to the production process at his studios, it is rather surprising to find that European Marxist intellectuals rarely discuss this link between Disney and Fordism. It appears that whenever Disney animation is invoked, from Benjamin's utopian investment in Mickey Mouse to Adorno and Horkheimer's distrust of Donald Duck and Eisenstein's appraisal of plasmatic characters in *Merbabies* (1938), their commentaries focus on the finished product rather than the material process of the image production. Eisenstein's analysis of Disney's films is representative in this regard. Although Eisenstein draws a connection between the organic plasticity of the image in Disney animation and the mechanistic rigidity associated with Fordism, his reflection on this connection does not extend beyond the level of the finished product of animation. Plasticity, as I will briefly discuss in the next section, remains an attribute or quality of the animated images on screen.

## Sergei Eisenstein and Disney

Eisenstein shows himself to be as utopian as Benjamin in his affirmation of the therapeutic function of Disney animation, though he also acknowledges that it offers only a temporary escape from the rigidity of life under capitalism. In a 1941 essay, for example, Eisenstein writes:

Disney is a marvelous lullaby for the suffering and unfortunate, the oppressed and deprived. For those who are shackled by hours of work and regulated moments of rest, by a mathematical precision of time, whose lives are graphed by the cent and dollar... The grey, empty eyes of those who are forever at the mercy of a pitiless procession of laws, not of their own making, laws that divide up the soul, feelings, thoughts, just as the carcasses of pigs are dismembered by the conveyor belts of Chicago slaughterhouses, and the Ford's conveyor belts... Disney's films are a revolt against partitioning and legislating, against spiritual stagnation and greyness. But the revolt is lyrical. The revolt is a daydream. Fruitless and lacking consequences. (Eisenstein, 2006: 88)

As the phrase ‘the conveyor belts of Chicago slaughterhouses, and the Ford’s conveyor belts’ indicates, the oppressive conditions of life against which Disney animation offers a temporary solace is ironically structured by the system of Fordism. Eisenstein clearly presents Fordism as a system of rigidity that dominates the life of the mass audience, but he places Disney animation outside this system as its antidote.

According to Eisenstein, what Disney animation offers is an alternative world in which this system of rigidity is fiercely contested and temporarily suspended. He writes: ‘In a country and social order with such a mercilessly standardized and mechanically measured existence, which is difficult to call life, the sight of such “omnipotence” (that is, the ability to become “whatever you wish”), cannot but hold a sharp degree of attractiveness’ (p. 103). Crucial here is Eisenstein’s reasoning that those who suffer under the Fordist system of regimentation will desire plasmaticness. It is this desire that is actualized by the malleable and protean quality of animated images on screen.

What is striking about Eisenstein’s analysis of Disney animation is that he does not extend his critique of Fordism to Walt Disney himself. He simply calls Disney ‘beyond good and evil’ (p. 93). Eisenstein’s theory of plasticity in early Disney animation is, arguably, predicated on the appearance of animated images. Plasticity appears to be a matter of the image. It is essentially a phenomenological attribute of animated figures that stretch, squash, and metamorphose: ‘Disney’s beasts, fish and birds have the habit of stretching and shrinking. Of mocking at their own form, just as the fish-tiger and octopus-elephant of *Merbabies* mock at the categories of zoology’ (p. 88). Plasticity in his theory thus concerns the visual attributes of the finished image itself – but not necessarily of the process of production.

Now, this privileging of the finished product of Disney animation over the production process is not limited to Eisenstein. As I discussed earlier, Benjamin was concerned with the collective appeal of Mickey Mouse to the mass audience, and Adorno and Horkheimer singled out the beatings of Donald Duck to theorize the disciplining of workers through leisure-time consumption. These thinkers’ attention to the work of Disney is thus marked by their shared interest in the appearance of the image. While the problem of Fordism obviously informs their discussions of Disney animation, this problem is primarily dealt at the level of the image, and not at the level of the material process of the image production. It is here that the works of Japanese thinkers, Imamura and Hanada, offer important critical insight.

## Imamura Taihei and Disney

While Japan did not have the same institutional environment that gave rise to the Frankfurt School of critical thought – the closest one would be the Kyoto School of philosophy developed in the interwar period – the work of Hegel as well as that of Marx had a comparable impact on much early 20th century cultural criticism in Japan. Imamura Taihei and Hanada Kiyoteru, whose writings on Disney I will turn to next, were no exception in this regard. Both were conversant with and influenced by Hegelian-Marxism. Imamura was the first film theorist in Japan to publish a whole book dedicated to the history and theory of animation: *Manga eigaron (On Animation Film)*, originally released in 1941. In spite of his canonical position in the history of animation studies in Japan, and in spite of Japanese *anime*’s centrality in contemporary studies of animation, Imamura’s work has yet to receive extensive recognition outside Japan (apart from Mark Driscoll’s excellent analysis of *On Animation Film* in his article, ‘From kino-eye to *anime-eye/ai*’ [2002]). Imamura’s work on Disney offers a fitting counterpart to the work of Eisenstein. Both writers are concerned with the relation between industrial capitalism and Disney animation, yet their approaches to this relation critically diverge.

While Imamura is known for his almost dogmatic defense of the photographic, indexical basis of cinema and documentary filmmaking in particular, he was literally the pioneer of animation studies in Japan. Imamura was also one of the leading Japanese film critics who contributed to the introduction of European film theories to Japan. His 1951 book, *Introduction to Film Theory*, for instance, provides a comprehensive introduction to the work of early European and American film theorists, including Hugo Münsterberg, Rudolf Arnheim, Béla Balázs, Sergei Eisenstein, and Paul Rotha. Imamura's *On Animation Film* was published in 1941, the same year in which Siegfried Kracauer published his critical response to Disney's animated feature, *Dumbo* (1941). One of the avid readers of Imamura's *On Animation Film* was Hanada Kiyoteru, a Marxist intellectual interested in avant-garde filmmaking. With the strong recommendation of Hanada, *On Animation Film* was republished in 1948. The centrality of Disney films to Imamura's analysis of animation is evident in the use of the image of Mickey Mouse on the cover of this book. Mickey Mouse, clad in a magician's robe, is positioned within a yellow rectangular space – evocative of the film screen – against a black background. The mise-en-scène of this cover is clearly staged to connote the magic of cinema, or more precisely, the magic of Disney animation, which Imamura goes on to analyze in depth in the book (Figure 1). Two years after this republication of *On Animation Film*, Imamura launched a small film journal, *Eiga bunka* (Film Culture), which Hanada worked on as a contributing editor. While Imamura and Hanada often disagreed on many fronts, their readings of Disney animation share a fundamental concern with the material process of image production.

Much like Eisenstein, Imamura sees a strong correlation between Disney animation and industrial capitalism. Yet, contrary to Eisenstein, Imamura finds a celebration of industrial rationalism and technology in the world of Disney. He calls animation or the cartoon film (*manga eiga*) 'the most typical art form of Americanism'. Imamura writes, for instance,

The cartoon films of Walt Disney love dynamism and speed of machines. The wittiness of his films arises from the mechanization of nature. Take, for example, the tail of a beaver that spins like a propeller and turns into a motorboat that glides over water. Or, take the example of a bison that chases Mickey Mouse. As the speed of the running bison accelerates, its body turns into a streamlined locomotive, and we hear the sound of locomotive horn presented as the sound of Mickey's scream. (Imamura, 2005: 114)

Imamura here reads Mickey Mouse films as an allegory of industrial capitalism and its machines. However, Imamura does not limit his reading of Disney animation to this allegorical interpretation at the level of the image. Instead, he turns to the very process of the image production, in particular, the use of live-action films and still photographs.

In the chapter titled 'Moving Cartoon', Imamura gives a pre-history of animation by going back to the inventions of the magic lantern and optical toys such as the Thaumatrope, the Phenakistiscope, and the Zoetrope. In this regard Imamura's pre-history of the animation film is not so different from that which has been offered by Lev Manovich (2001). However, what differentiates Imamura's genealogy of animation from that of Manovich is Imamura's emphasis on the radical rupture in the history of animation: the rupture introduced by the invention of photography. For Imamura, the analysis of Disney animation is incomplete without taking into account Eadweard Muybridge's invention of sequential photographs. Muybridge's sequential photography and his studies of motion are key to Imamura's analysis of Disney, as he thinks Disney's animation films differ fundamentally from early examples of animation that relied solely on hand-drawn pictures.

Muybridge's photographic studies of motion allow Imamura to divide the history of moving pictures into two phases: the early history of optical toys and the late history of celluloid-based



**Figure 1.** The cover of Imamura Taihei's 1948 edition of *Manga Eigaron* (On Animation Film), featuring an image of Mickey Mouse as if projected on a film screen.

animation, mediated by the camera. In Imamura's view, while the drawn images of a horse in a Phenakistiscope may appear to be 'moving' when the disc spins, this movement is only 'hypothetical', or imaginary. By contrast, when the filmstrip that contains the recorded images of a horse is run through a projector, the movement that appears to the viewer is no longer hypothetical, since it is a reconstruction of the actual movement of the running horse recorded by the camera (Imamura, 2005: 30). He writes: 'The history of the cartoon film is thus distinguished from the pre-history of moving images because of this mediation by photography. The cartoon film, which is a metamorphosed form of photography, contains true movement instead of the hypothetical movement generated by moving pictures' (p. 31).

Importantly, it is here that Imamura refers to Disney animation. He argues that the work of Walt Disney is particularly exemplary of animation proper because of the preparatory process of observing actual movements of animals and humans:

The process of 'animating' in Disney's films means the [dual] process of decomposing a certain motion into photographs and of translating this observation into pictures. The imagination of this new mode of animation is based on the photographic record of reality, and thus it cannot exist without the [mediation] of the camera. (p. 31)

In other words, Imamura puts an extra emphasis on this dual production process in his study of Disney animation. Just as the invention of the camera separates the history of optical toys from the history of animation proper, so Disney's use of sequential photographs and live-action films separates his work from early practitioners of animation films. Importantly, Imamura's emphasis on the use of observation of actual movements through live-action film and still photography differentiates his work from that of contemporaneous European theorists, including Eisenstein, who otherwise analyzed the work of Disney at length.

Imamura thus locates the uniqueness of Disney in his use of live-action films and still photographs to observe actual movements of animals and human actors. This preparatory process of using live-action film and still photography was something that Walt Disney adopted in the early 1930s. We should note that Imamura did not limit this use of live-action film to the practice of 'rotoscoping'. Rotoscoping is the process of frame-by-frame tracing of recorded movements of actual human actors or animals by animators, which was developed in 1915 by Max Fleisher. As is often noted, Fleisher used rotoscoping as a way to create a seemingly more 'realistic' (or photorealistic) style of movement, which closely follows the filmed motion of living actors and animals.

While Disney occasionally used the technique of rotoscoping, he also developed other ways of enhancing realism in animation. For example, the animators in Disney studios would shoot live-action films, make what they call 'photostats' (which were separate reprints of blown-up frames in the form of a flipbook) and study the movements frame-by-frame (Thomas and Johnston, 1981: 321). The animators also attended life-drawing classes, and used Muybridge's photographs to study motions of animals.<sup>6</sup> It is this *general* use of live-action films to observe movements – rather than rotoscoping in particular – that most interested Imamura and, later, Hanada.

The decomposition and recomposition of real movements recorded by the camera that became an integral part of Disney's animation-making process also contributed to its increased productivity and efficiency (Thomas and Johnston, 1981: 323). In other words, this use of live-action film went hand in hand with the industrialization of Disney studios on the model of the Fordist factory. This correlation between Disney's 'animating' method based on the twofold process of observing movements and drawing pictures and the Fordist mode of organizing labor is precisely what Imamura discusses in his 1953 essay, 'On Walt Disney'. Here Imamura first compares the *division* of

labor involved in the whole process of producing an animation film (i.e. drawing rough sketches on paper, drawing images on the cel, coloring, etc.) to the *decomposition* of a movement into discrete photograms on a filmstrip. He then compares this process of division-decomposition to the Fordist mode of production, in which different workers produce numerous, distinct parts, and assemble these parts into a final product:

The more complex the division of labor is the more efficient and profitable... The same can be said about the decomposition of real movements. The division of labor is needed to decompose movements as well... Disney animation is doubly 'American' in the sense that it made pictures dependent upon the machine (the camera) and automated the assembling process (the assembly-line). (Imamura, 2005: 181)

Here, then, Imamura makes a direct link between the Fordist process of production in Disney animation, and Disney's use and transformation of photographic images in this animation process.

### Hanada Kiyoteru and Disney

In the early 1950s Hanada Kiyoteru, a Japanese Marxist film and avant-garde art critic, took up Imamura's analysis of Disney. Hanada was involved in organizing various avant-garde groups (such as the legendary artist collective *Yoru no kai*) and serving as a chief editor of the Marxist literary journal *Shin nihon bungaku* (*New Japanese Literature*). At this time Hanada was also developing a theory of what I call 'avant-garde documentary' filmmaking. Interestingly, one of the inspirational models Hanada found for this avant-garde documentary filmmaking was Disney's use of live-action film in making his animation films. In the 1952 essay, 'Cheshire Cat' (*Warai neko*), for instance, Hanada argued that the production process of Disney animation approximates the dialectical synthesis of the documentary process of scientific observation and the avant-garde process of imaginary deformation. Following Imamura's lead in his study of Disney animation, Hanada emphasized the photographic recording of actual movements and gestures of human actors and animals. While Hanada reserves a fair dose of criticism for Disney studios for its commercialism and conformism – he voices particular disappointment with the feature *Alice in Wonderland* (1951) – he applauds its production *method*, which he regards as dialectical, in the Marxist sense (Hanada, 1964: 224).

The animating process of Disney films is dialectical for Hanada precisely because the first stage of photographic recording is both negated by and preserved in the second stage of drawing pictures. The final product is a kind of dialectical synthesis that preserves the traces of both stages of preparation. In other words, the recording of actual movements by the camera functions as a documentary decomposition of the movement, which undergoes an avant-garde process of transformation by hand, and then becomes an animated recomposition of movement through projection (p. 224). The key to this dialectical process of animating is the intermediary stage of hand drawing, which functions as the moment of *dialectical mediation*, negating the previous stage of photographic recording. The final product of Disney animation embodies the tension between these two distinct modes of filmmaking. This dialectical interpretation of the use of live-action in Disney animation is something that Hanada uniquely develops by building his argument upon Imamura's earlier analysis of Disney.

One of the most important outcomes of Hanada's dialectical reading of Disney is that it allows us to develop a very different conception of plasticity in relation to animation than has been articulated thus far. In essence, I would suggest that we can extrapolate from Hanada's reading of Disney a conception plasticity as a kind of dialectical process of formation and transformation. Plasticity

understood in this manner allows us to extend its relevance from the image itself to the material process of image production. While Hanada does not explicitly address the issue of plasticity in his reading of Disney animation, it is present insofar as plasticity is key to Hegelian dialectics, a conceptual framework that Hanada adopts in his analysis of animation. As the recent work (2005) by French philosopher Catherine Malabou suggests, plasticity as a dialectical process of form-receiving and form-giving is at the core of Hegel's philosophy. Deriving from the Greek word *plassein*, the term *plasticity* connotes the act or capacity of molding or giving form to a substance as well as the capacity of a substance to receive form or be molded. Plasticity is a concept that connotes both passivity and activity. Malabou's reading of Hegelian dialectics through this lens of plasticity can, I would suggest, be fruitfully paired with Hanada's dialectical reading of Disney animation.

According to Malabou, the process of self-determination central to Hegelian dialectics is a plastic movement of incessant form-giving and form-receiving. By the term self-determination we may understand the creative capacity of a substance or a subject to generate form, or to receive form. This twofold process of form-giving and form-receiving *as* plasticity underpins Hegel's understanding of dialectics as a fundamentally temporal, transformative movement. She writes: 'The dialectical process is "plastic" because, as it unfolds, it makes links between the opposing moments of total immobility (the "fixed") and vacuity ("dissolution"), and then links both in the vitality of the whole' (2005: 12). Hanada's understanding of Disney animation similarly emphasizes the dialectical movement of formation and transformation as a constitutive process of image production *prior* to the appearance of the image. In other words, plasticity is not simply an attribute of the animated images themselves – the malleable quality of drawn and painted figures that stretch and squash in projection – but it also designates the material process of image production.

Since Hanada is not a systematic thinker, we have to tease this theory of plasticity out of several different essays written in the late 1940s and early 1950s. In one essay written in 1949 Hanada analyzes sand as an exemplarily plastic matter. This essay encapsulates his understanding of plasticity as a *general*, dialectical movement of formation and transformation. The focal point of his argument is on the dual capacity of sand to be passively molded or to actively mold something else. While sand consists of an amorphous mass of particles, when it is compressed it can serve as a mold for metal casting. Its versatility as a plastic matter lies in its capacity to receive given form from the outside as well as to give form unto something else (Hanada, 1963b: 247). As in the essay on Disney animation, Hanada's central emphasis in this essay is on the process of (trans)formation buttressed by the dialectical movement of form-receiving and form-giving.<sup>7</sup>

Finally, Hanada's dialectical conception of plasticity as an incessant movement of form-giving and form-receiving reappears in his theorization of the masses (*taishū*). In several of the essays written during the 1950s he addressed issues of the masses, mass culture, and mass media. Not surprisingly, given that he was a self-proclaimed Marxist, Hanada approached the question of the masses through the lens of self-determination. Against the then dominant current of social theory in Japan that posited the masses as a passive, amorphous and impressionable entity that lacked critical agency of its own, Hanada argued for an active, Marxist conception of the masses as a collective agent of historical transformation. The masses, in his eyes, were endowed with the inner capacity to self-organize themselves, even though they were susceptible to external influences and outside forces. Taking the common expression 'sand-like masses' as a starting point, Hanada suggested that if the masses were indeed *like* the sand, then they were also endowed with the dual capacity to self-generate their form as well as receive form imposed from the outside (1963a: 148). Hanada's understanding of the masses as a *dialectically plastic* subject is significant because it brings us back to the structural connection between plasticity in Disney animation and Fordism that I raised at the beginning of this article.

Since the onset of industrialization a passive conception of the masses as malleable, unstable, amorphous, impressionable, and undifferentiated has dominated most sociological discourses on the masses. As Raymond Williams suggests, this passive conception of the masses in the modern industrial age inherits the negative connotations of being 'low', 'ignorant', and 'unstable', attributes which used to be associated with the related concepts of the 'many-headed multitude or mob' (Williams, 1983: 195). For sociologists such as Gustav Le Bon, the category of the masses was in fact inseparable from the 'suggestibility and manipulability of people who were no longer constrained by communal ties and traditional authorities' (Yamada, 2006: 35). Now, if we were to follow Hanada and Hegel, this passive conception of the masses as a plastic substance that takes form given from the outside is *not* dialectical. It highlights only the receptive aspect of plasticity. This receptive or passive understanding of plasticity, however, became the dominant framework of Fordism. The Fordist mode of production hinges on the standardization of products as well as the regimented organization of labor. Workers' bodies are subjected to the rigid mechanism of control and discipline. Workers under the Fordist system, we might say, are envisioned as *passively plastic*, that is, moldable by a discipline imposed from outside. This conception of workers as 'moldable' by the disciplinary force predates Fordism, of course. Taylor's principles of scientific management already envisioned workers in terms of their passive plasticity. However, as Michael Aglietta suggests, 'Fordism took up the principles of Taylorism and put them more effectively into practice, to obtain an even greater intensification of labor' (1979/2000: 117). Take, for example, the emblematically Fordist image of the factory worker embodied by Charlie Chaplin in *Modern Times* (1936). His whole body is subjected to the rhythm and speed of the assembly-line and the automatic feeding machine. Here, the passive plasticity of the worker is caricatured by showing the worker's disciplinary submission to the machinery.

As discussed earlier, this regimented organization of labor under Fordism was integral to the production of Disney animation. At his Burbank studios Disney too subjected his workers to disciplinary order and control. If passive plasticity was the operative logic of Fordism, it also governed the material production process behind Disney animation. In other words, taken as a whole, early Disney animation embodies the opposing modalities of plasticity (passive and active forces of form-receiving and form-giving), which informed not only the material process of its image-making but also the disciplinary process of organizing its workers' bodies. This is why the question of plasticity in Disney animation cannot be understood at the level of the image alone, but must also be addressed at the level of the production of this image. Imamura and Hanada's analyses of Disney animation, which foreground the material process of producing animated images over the finished products of animation, are thus important critical interventions into the study of animation, for they enable us to shift our ways of thinking about the animated image, and rethink plasticity in direct relation to the Fordist organization of labor.

## Conclusion

In closing, I want to suggest some speculative possibilities opened up by this way of thinking about plasticity at the level of the material conditions of image production. To understand plasticity in relation to the Fordist mode of image production (Disney), we have to think it not only at the level of the *medium*, but also at the level of *labor* as well. Fordism, coupled with the Taylorist model of discipline, is the quintessential mode of industrial production that envisions workers as a malleable substance. Fordist workers in this conceptual schema appear as a passively plastic substance that receives forms imposed from the outside. What is at stake here is the one-sided conception of plasticity as simple *malleability*. This one-sided conception of plasticity as malleability characterizes the Fordist model of labor.

However, something happened with the spread of post-Fordism since the 1970s. A certain change has been introduced to the understanding of labor in terms of plasticity. Instead of the malleability of the workers the emphasis shifts to flexibility of the workers. If malleability was the *modus operandi* of Fordism, flexibility is that of post-Fordism. Within this post-Fordist conception of labor, workers are forced to become active subjects who constantly strive to self-improve, invent and reinvent themselves in accordance with the ever-changing demands of the labor market. Unlike the Fordist model of the ideal worker who can endure monotonous and repetitive tasks under a strictly regimented environment, the post-Fordist model of the ideal worker is one who flexibly performs multiple tasks ('multitasks') under unpredictable circumstances. It thus appears that flexibility understood as the capacity to self-organize and give form onto itself is demanded from the worker under post-Fordism.

Nevertheless, this apparent idealization of flexibility, if we follow Malabou's recent critique of neuroscience and contemporary capitalism, is just another variation of the passive conception of plasticity: 'To be flexible is to receive a form or impression, to be able to fold oneself, to take the fold, not to give it' (2008: 12). Flexibility within post-Fordism is, according to Malabou, no different from malleability; both lack the truly creative force of active plasticity, the capacity to generate new forms. While we may agree with Malabou's critique of flexibility as an ideological trap that gives a false promise of agency to the workers, who in fact are subordinated to control from the outside, to end this engagement of plasticity with a critique of passivity alone is not satisfactory. It is particularly so when we bring the discussion back to the realm of animation.

As Hanada and Imamura's readings of Disney animation suggest, it is possible to think plasticity dialectically by locating it at the level of the medium or the technical process of making animation films; the combined use of live-action films and hand-drawn pictures points to this possibility. While this dialectical conception of plasticity comes out of the conjunction of Fordism and Disney animation, it may be possible to use this dialectical understanding of plasticity at the level of image production within the context of post-Fordism. For example, we may theorize the contemporary use of live-action segments in digital cinema, or the use of 3-D motion capture in terms of a dialectical conception of plasticity. Similarly, we may extend this framework to reflect on another aspect of the material conditions – the organization of labor – behind the production of animation within post-Fordism.

These are just a few possible avenues of inquiry that these early Japanese thinkers' reflections on Disney animation and Fordism open up for us. In addition to providing a much needed intervention into the works of Imamura and Hanada, and their comparability to their European contemporaries, I hope that this article has provided a new way of rethinking the relation between image-production and labor that can assist us in reflecting on the transformations that have occurred since the advent of post-Fordism. Indeed, to rethink plasticity in animation at the level of the material process of production instead of simply treating it as an attribute of the end product of the image enables us to think critically about the importance of the medium of animation in today's post-Fordist economy. It is with such an approach in mind that we might productively approach the increased attention paid to animation within contemporary image-making practice.

## Notes

- 1 For instance, the important work of Thomas Lamarre, 'Speciesism, Part 1: Translating Races into Animals in Wartime Animation' (2008), invokes Eisenstein's concept of plasmaticness to address 'a fascination with plasticity and elasticity' (p. 79) in his discussion of the relation between wartime animation and Japanese imperialism. Similarly, Vivian Sobchack in her recent thought-provoking article, 'The Line and the Animorph or "Travel Is More than Just A to B"' (2008), turns to Eisenstein's ideological analysis of 'the animated line's "plasmaticness"' (p. 255).

- 2 I am using the phrase 'leftist' to account for the strong influence of Marxism on Imamura and Hanada. Imamura's engagement with Marxism is far more than cursory, in fact at the time he wrote the book *Manga eigaron* he was under police observation for his involvement with leftist activism (Sugiyama, 2005: 248). Hanada Kiyoteru converted to Marxism during the war, and became a card carrying member of the Japanese Communist Party in the postwar period.
- 3 Many scholars have acknowledged the historical importance of Taylorism for the analysis of the early animation industry. Donald Crafton, for instance, compares John Randolph Bray to Henry Ford, and suggests that Bray revolutionized the animation industry by adopting the Taylorist system of scientific management in his studios (Crafton, 1982/1993: 139). While this historical connection between Taylorism and animation cannot be overlooked, I am using the term Fordism in order to draw attention to a certain continuity between the Fordist conception of labor as malleability and the post-Fordist conception of labor as flexibility. According to Michael Aglietta, 'Fordism is a stage that supersedes Taylorism' (1979/2000: 116). For the purpose of this article the term Fordism encompasses the Taylorist organization of labor.
- 4 As Susan Buck-Morss suggests, Benjamin also acknowledged 'the applicability of Disney's methods for fascism' (1989: 308). Disney animation thus occupied an ambivalent position in his critique of mass culture.
- 5 In discussing Disney's adaptation of Fordist method of production, Esther Leslie writes:

Following Disney, many companies divided the labour of animation and standardized the output. Figures, dimensions, gestures, all the chief features of characters, were fixed on a model sheet for reference. Various teams would work under a director, with distinct groups devising the scripts and gags. The cel process was now the dominant mode of production, and this enabled the distribution of tasks among director, scene designer, chief animator, animator, in-betweeners, department of colouring and buffing. (2002: 134)

- 6 Thomas and Johnston note this use of Muybridge's sequential photographs by animators:

They found that the amazing photographs made by Eadweard Muybridge nearly a hundred years ago were good for reminding them of what the animal does, but his cameras did not always catch the extremes or details of relative timing, and the pictures could be misleading if the animators were unfamiliar with the animal or the action. (1981: 333)

- 7 Given Hanada's emphasis on the material moldability of sand, one would expect him to turn to 3D stop-motion animation using clay models or puppets. However, it is 2D cel animation that figures prominently in his writings on animation. While the analysis of the relation between the dialectical conception of plasticity and 3D puppet or clay animation is important, this article focuses on 2D cel animation in order to draw attention to the writings of Imamura and Hanada on Disney.

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