Back to Issue 8

Invisible Culture
An Electronic Journal for Visual Culture

Heads or Tails: The Emergence of a New Cultural Series, from the Phenakisticope to the Cinematograph[1]

by Nicolas Dulac and André Gaudreault

This article is part of a larger research project on the different forms attraction has taken in the cultural series animated pictures[2] Here we will focus our attention on the first signs of the paradigm which we propose to call c*inématographie-attraction*, a paradigm in which the question of thresholds seems to us to be essential.[3] Moving picture programs juxtaposed, one after the other, a long string of often disparate views. Viewers of the period, for that very reason, were called upon to enter into a dozen sometimes completely heterogeneous worlds, one after the other, at the same screening.[4] The *cinématographie-attraction* experience was essentially an experience of discontinuity. Full of interruptions and sudden starts, this experience was a chain of shocks, a series of thresholds. The concept of the threshold will be particularly useful here, because it allows us to problematise the various kinds of discontinuity which punctuate the cultural series animated pictures. This punctuation took the form of one of two primary structuring principles running through this series and modulating its development: attraction and narration.[5]

Our discussion will begin at its emergence with optical toys such as the phenakisticope, the zoetrope, and the praxinoscope. We will attempt to demonstrate the ways in which it might be useful to address the question of *cinématographie-attraction* by resituating it before the fetish date of 28 December 1895, when tradition tells us it was born. We will be careful to keep in mind that the

cinématographie-attraction paradigm would itself soon yield to the institution cinema to cinema-narration, we might say thereby diminishing the importance of attraction by placing it under the thumb of narrativity.

Nevertheless, it is essential in a study such as this to enquire into the various possible meanings of the term threshold and the different concepts underlying it. Beyond threshold as a demarcation zone within a visual experience which extends over time, we will also inquire into the material thresholds of the different apparatuses. We will also inquire into the complex play of the various levels within these same apparatuses where borders and limits may be at work.

In this study, we will examine, the animated picture phenomena found between the period 1830-1900. Throughout this period, during which *optical toys* and *animated views* formed part of the same paradigm, attraction was the primary structuring principle. The workings of the phenakisticope and the zoetrope, their *rotation*, *repetition*, and *brevity*, established the form of attraction which was to dominate throughout the period.

The predilection of the earliest animated pictures for wriggling about, for trepidation, and the ephemeral is a good indication of how optical toys and animated views were part of the same cultural series.6 While socio-cultural factors, above all, determined that this series would place attraction centre stage, the role played here by the limitations of the apparatus need also been akcnowledged. One of the earliest major constraints that made it possible for attraction to dominate within the cultural series animated pictures was the medium used to convey these images.

The phenakisticope, for example, was a cardboard disk upon which a dozen figures were arranged in a circle around its edge (Fig. 1). Note in passing the extremely limited number of figures and the overweening simplicity of the series of images: here, a dancer turning on himself; in other models, a woman sewing, a jumping dog, a parading horseman, etc. The number of figures

was of course limited by the way the drawings were arranged radially, on the axis of the imaginary rays emitted by this wheel, the phenakisticope disk.

The limitations of the apparatus thus condemned it to a repetitive and inalterable demonstration of a series of figures forming a loop. Here it is impossible, in principle, to identify the head or the tail, giving free reign to attraction. Because of the brevity of the series of images, attraction necessarily took precedence over narration, and the *ad nauseam* repetition inherent to the device s functioning magnified the attractional aspect of the moving figures. This series of images was hostage to both circularity and repetition. No gap was possible, because the virtual head and the tail had to join up and match. The phenakisticope s very design meant that the thresholds of beginning and end were absent from it.

This at least is the impression phenakisticope designers strived to impart. With a few rare exceptions, the intervals between the phenakisticope s figures were measured to give the impression of a gradual moving forward of the action, making it impossible to identify which of these figures was the very first in the series. The phenakisticope s figures made up *a series with neither head nor tail*. Set in motion by the rapid turning of the disk, which brought about an inalterable flow of images, the succession of figures was thus free of any disjunction or aberration. There was no breach in the rigid continuity of the figures, which would have allowed a glimpse of narrative. Narrative had no place in such an apparatus, because of the programmatic limitation of the dozen images engraved on the disk, images condemned to turn endlessly, to perpetual movement, to the eternal return of the same.

Here and there we can find a few examples of disks which transgressed this rule of the endless loop. These disks, despite the limited narrative potential of the apparatus, appear to have wanted to stray on the side of narration (or at least on the side of anecdote). But this was a necessarily repetitive narration. The attempt to develop a minimal narrative sequence by establishing an

initial situation, followed by its modification and closure, meant that the action depicted on these disks tried to defy the limitations of the apparatus. But not without provoking aberrations in the continuity of the action each time the initial image reappeared. This was the case with the disk distributed by Pellerin & Cie. (Fig. 2) showing two fishermen harpooning a whale. Here the head and the tail are easily identifiable. In the first image, the whale is rising to the surface. The two men throw their harpoon at it, and it will remain lodged in the whale s body until the end of the series of figures. When the disk is rotated, the final figure is necessarily followed by a recurrence of the first, in which the whale recovers its initial integrity in a truly regressive manner.

Examples of this kind of disk reveal one of the peculiarities of the phenakisticope. If a designer did not consent to submitting his figures to the strict continuity/ circularity of the apparatus, he had to accept the fact that each revolution of the disk would create a visual interruption unless a clever and ingenious narrative pretext was employed, as was the case with the disk manufactured by Thomas MacLean (Fig. 3). Here the character s nose, which is cut off with an axe, returns with each rotation. In this way the interruption, by means of the narrativisation of which it is the subject, was in some way effaced. This is a good example if ever there was one of how the topic of the disk, or its story, was subjected to the way the apparatus functioned.

However there are few known examples of this kind of disk. Was it that the disruption, at the time, was noticeable enough to induce designers of disks to stick almost uniformly to a model of continuity? And yet, despite the break in the movement s continuity with each passing of the final image, producing a spasmodic effect, the element of attraction was just as present here (if not more so, in some respects, given the repetition of the visual shock produced by the interruption).

It would appear that the scarcity of disruptive subjects was a result of the limitations the apparatus imposed on designers of phenakisticope disks. Don t all apparatuses

impose a way of conceiving the subject they depict? In fact, something proper to the mechanics of the apparatus itself can be seen in the bodies depicted on the disk? The phenakisticope s format and the way it functioned suggest a world in which everything was governed by circularity and repetition, a world which annihilated any hint of temporal progression. The subjects are like Sisyphus, condemned *ad infinitum* to turn about, jump, and dance. In another sense, the figures are machine-like: untiring and unalterable, they are acted-upon subjects rather than acting-out subjects. The lack of interruption in the sequence of images was essential to the creation of this effect of uninterrupted and perpetual movement, this ahistorical temporality within which beings and things could turn about for ever, without any threshold marking the beginning or end of their wild journey. Many disks depicting machinery, gears, and levers (Fig. 4) emphasize this aspect; as eternal and unbreakable machines, they are emblematic of the wildest dreams of modernity?

The experiments of optical toy designers brought about a series of modifications to the apparatus which, eventually, made it possible to place the subject in a historical temporality, thereby making it pass to the level of acting-out subject. The zoetrope arrived on the scene about the same time as the phenakisticope. With the zoetrope, (Fig. 5) the principle underlying the illusion of movement remained gyration, and as long as its drum remained of modest size, the number of images was as limited as the phenakisticope s. With the zoetrope, however, *the images and the apparatus are no longer joined as one*. When a user picked up the phenakisticope s disk of images, he or she was also picking up the apparatus itself. With the zoetrope, the apparatus is on one side and the strip of images on the other. Users thus felt the presence of the apparatus a little less. Moreover, the longitudinal rather than radial arrangement of the figures made possible a major transformation in the conception of animated pictures. While the zoetrope also appears to have been inexorably condemned to the return of the same, the transformation it introduced by separating the images from the

apparatus, substituting a flexible strip for the disk, made possible some minor innovations in the medium s language, as we shall see later on.

What exactly was involved, then, in the move from a rotating disk to a flexible strip? With its rectangular shape, the zoetrope strip necessarily came with a head and a tail. In order to put the figures into motion, the user had to place the flexible strip inside the drum and create a loop, an endless loop. However, like the phenakistiscope, every time the user placed the strip in the drum, the head and the tail had to match, thereby voiding the beginning/end distinction proper to the strip. Circularity thus remained at the heart of the apparatus.

With the zoetrope, the horizontal quality of the strip imposed limits of another sort on the series of figures: longitudinal limits (at the upper and lower limits of the strip). While the circular arrangement of figures in the phenakisticope sometimes pushed them to go beyond the very border of the disk (as seen in this disk by T.M. Baynes (Fig. 6), which gives the illusion that the rats are literally fleeing off the surface of the disk), the zoetrope s horizontal nature encouraged instead the linear development of the images. The action was conceived of in a slightly more historical manner, a little more like narrative.

Since it did not always succeed in containing the ebullience of the images, the edge of the phenakisticope was not always an inviolate threshold. In addition, on a symbolic level, its circularity limited the action depicted to an absurd length of time, in which closure was impossible. The radial arrangement of the images ensured that they were invariably organised in relation both to the centre and to the edge of the disk. Centrifugal and centripetal force reigned there equally, along with a sense of movement beyond the confines of the disk. The phenakisticope functioned according to both explosion and *im*plosion (even if it was possible, on occasion, to depict the tranquil movements of a dancer turning about). Like the kaleidoscope, the phenakisticope belonged more on the side of the cosmic, of the big bang, and of

the expansion and contraction of the universe (Fig. 7).

On the other hand, the horizontal arrangement of the figures on the zoetrope strip encouraged a linearisation of the action performed by the subjects depicted. Despite the repetitiousness of the figures and their evident quality, in the end, as attraction, the zoetrope infused them with a hint of self-realisation, with an aspiration to spread their wings, we might say. A yet-to-come which would of course never materialise, because everything simply turned in circles. Because of the nature of its construction, however, the apparatus allows us to catch a glimpse of this.

So too, the zoetrope was much closer to the terrestrial. Here animated pictures lost a large part of their propensity to fly off in all directions, of their whirlwind and high-riding quality. With the zoetrope we are nevertheless still in the realm of attraction, but its horizontalisation of the figures, their linearisation, made it possible for narrative elements to seep into the series of images. Here, the figures were inscribed in a more matter-of-fact manner: they were brought back, neither more nor less, to terra firma, where they moved laterally, a common enough kind of movement for terrestrial animals (perhaps it was not without cause that the zoetrope s original German name was the *zoo*-trope). Moreover, in these scenes the ground was often depicted as part of the décor, at the bottom of the strip, where it should be, without the troubling curvature it had in the phenakisticope. In addition, the zoetrope drum was itself equipped with a floor, on which the strip rested when the user put it into place.

The use of a flexible strip opened up new possibilities for presenting the figures. The zoetrope made it possible to exhibit images from two distinct strips at the same time. This was far from a negligible innovation, especially if we consider how this kind of manipulation bears a strange similarity to editing.7 Here are some of the combinations a major distributor of zoetrope strips was advertising as early as 1870 (Fig. 8):

> Very effective and humorous Combinations can frequently be made by overlapping one strip of Figures with the half of another strip❩Amongst some of the most effective of these combinations, the following numbers will give very amusing results: 4 & 5, 7 & 10, 3 & 13 (etc.).8

Note the effect, for the zoetrope user, of these syntactical combinations: a systematic alternation between two figures in movement was established, in the A-B-A-B pattern. Here the imperturbable filing by of the zoetrope s endless loop was called into question. And yet the basic quality of the images had not changed: zoetropic editing was more attraction than narration. We are not invited to follow, narratively speaking, the vicissitudes of this or that zoetropic figure from one time, space, or situation to another. Rather, we are invited to take delight in the transformation-substitution relationship the images are subjected to and which they illustrate. This is a *recurring metamorphosis* of the figure, not a *reiterated following* of the action.

Such a combination of strips made it possible, all the same, to transgress the canonic rule of the zoetrope, its homogeneous parade of images, a rule it shared with the phenakisticope. Here, however, the series of images contained thresholds, in the form of interruptions, which broke the rigid framework of figural unicity and opened the door to bifidity. Yet this form of editing remained a prisoner of the drum s circularity, which was clearly a coercive structure. The turning wheel continued to turn, indefinitely. Thresholds rose up, making it possible to pass, first, from the *end* of series A to the *beginning* of series B, and then from the *end* of series B to the *beginning* of series A (*ad nauseam*), but these thresholds were repetitive: we always come back to the same end, we always come back to the same beginning. The alternation did not allow the action to start up again *narratively*, nor to start a new chapter : it only allowed it to start up again *attractionally*. The befores and afters were not, to borrow Umberto Eco s expression, essential befores and afters, capable of containing the action

effectively and of allowing it to aspire to the status of an embryonic minimal narrative sequence.9

Émile Reynaud s transformation of the zoetrope put this attraction/narration tension into play in a particularly apparent manner, as seen in his praxinoscope (1876), praxinoscope theatre (1879), and praxinoscope projector (1882). In the end, in his optical theatre (*Théâtre optique*, 1892), narration came to the fore as the primary structuring principle.

As the reader is no doubt aware, the three varieties of praxinoscope functioned in roughly the same way and according to the same basic principles as the zoetrope (rotating drum, flexible strip, etc.) The invention s originality lay in its prism of mirrors which, located at the centre of the apparatus, replaced the zoetrope s cut-out slits. The introduction of this prism made it possible to get around the serious problem of reduced luminosity and to develop a system which, after a few alterations, proved to be particularly well-suited to narrative development. The weak luminosity of previous optical toys obliged their designers to opt for simple figures with strong outlines, to neglect the background almost entirely, and to limit the scene to a repetition of a minimal sequence of events. With his praxinoscope, Reynaud introduced a new approach to the figures by emphasising the precision of the drawing and by exploiting the subtlety of the colours.

This new way of conceiving the figures was strengthened by a constant tendency on Reynaud s part to isolate the figures and to make them conspicuous. This tendency was seen, first of all, in the large black lines separating each figure on the praxinoscope strips, and then by the separation of figure and background in Reynaud s three other inventions, including the optical theatre. When we examine a stationary praxinoscope strip, the black lines visibly isolate the figures from each other (Fig. 9), but what is of greatest importance is that these bars played the *same role* when the images were set in motion. With the praxinoscope (or in Reynaud s version of it at least), the image seen in the show had become a *framed*

image.10 With Reynaud, the moving figure was in fact delineated on all four sides: by the vertical bars to the left and right, and by the upper and lower edges of the mirror on the top and bottom.11 Needless to say, this isolation of the figure was not complete; normally, the viewer of the praxinoscope would see three images at a time in his or her field of vision. The presence of the vertical bars on the strip, in conjunction with the play of mirrors, nevertheless made it possible to set one of these (the one most closely facing the viewer) off from the others and to detach it from the whole. Previous optical toys had not sought to isolate the image in this way. They invited the viewer, rather, to a group performance. The absence of borders between the figures prevented any of them from standing out, and the two or three figures in the viewer s field of vision presented themselves to view simultaneously and more or less equally.

The isolation and conspicuousness of the image was amplified by Reynaud in the second and third versions of his apparatus the praxinoscope theatre and the praxinoscope projector in which the number of figures presented to the viewer s gaze was generally even more limited. These apparatuses sometimes allowed only a sole figure in motion to filter through to the viewer. To obtain this result, Reynaud placed a mask between the images and the viewer which functioned as a passe-partout and cast the figures onto a black background. This allowed for the superimposition of a décor, which was painted on another material and remained immobile. Reynaud thus brought about a radical separation between figure and background, a procedure he retained right through to the optical theatre.

Nevertheless, the optical theatre broke with the model of the toys which preceded it. In the different versions of the praxinoscope, the image remained a prisoner to the drum and, as in the phenakisticope and the zoetrope, the action formed an endless loop. With the optical theatre, Reynaud repudiated the model of the endless loop. He broke the intrinsic circularity of the apparatus and turned his back on the canonical tradition of optical toys. Moreover, the optical theatre was not, properly speaking,

a toy : the viewer no longer manipulated the apparatus directly, which was now hidden from sight; he or she simply watched the images file past.

Unlike earlier apparatuses and all other optical toys, the head and the tail of the strip used in the optical theatre were not designed to meet. Here we find thresholds of the first degree, literally a beginning and an end. The principle of *circularity* was dethroned in favour of *linearity*. For the drum, a closed receptacle which kept the strip of images prisoner, Reynaud substituted two reels one dispensing the strip, the other taking it up which made it possible to view the strip, which now wound onto itself, from head to tail (Fig. 10). Also, not only was the image seen as a *framed* image, but it was also a *unique* and *singular* image. The strip was composed of a series of distinct frames. The isolation of the figure within the apparatus corresponded to the isolation of the figure on the screen; henceforth there was only one image, the changes to which the viewer followed.

Reynaud s apparatus thus went beyond mere gyration, beyond the mere thrill of seeing the strip repeat itself, beyond pure agitation. Here, even if attraction was still welcome, narrative had taken over from it as the *primary structuring principle*. A strip such as *Autour dune cabine* (Around a Cabin, c. 1895) was in fact part of a new paradigm, within which narration would play a decisive role. The story told in this strip (as well as in *Pauvre Pierrot* [Poor Pierrot, c. 1892]) eloquently went beyond the threshold of minimal narrativity. In *Autour dune cabine* we see an initial title card, followed by an establishing shot and a conflict and its resolution, before finishing with a *finale*: on the sail of a small boat in the centre of the image, we read The Show is Over (La représentation est terminée ;Fig. 11). The narrativity this strip demonstrates was possible because Reynaud was able to give his series of images the development required for any narrative to occur.

The optical theatre thus carried out a transformation of the apparatus which was both quantitative and qualitative. It had *more* images, many more even, but at

the same time and paradoxically, for the viewer there was now *only one image*, magnified a hundred times to boot. In addition, this image was external to the viewer. In the case of optical toys, the viewer became one with the apparatus; he or she was in the apparatus, became the apparatus. In the optical theatre, the image put into motion was, on the contrary, completely independent of the viewer. The viewer was cast beyond the limits of the apparatus and was kept at a distance from it, no longer having anything to manipulate. In short, this new autonomy of the image depicted, which derived from the conspicuousness of the image and the configuration of the new apparatus, represented a turning point in the history of the series animated pictures.

The imposition of first-degree thresholds was a decisive factor in the advent of this turning point. Before it became possible to introduce such narrative thresholds as the beginning and the end, however, it was necessary to establish second-degree thresholds (the head and tail of the strip, the frame around each image). The conspicuousness of the representing image on the film strip itself was reflected on the screen by an equally effective conspicuousness of the represented image. This exceptional process of rendering the figures autonomous and conspicuous and this is essential to our argument here is also found in the development of cinematic views, as we shall see below. All things considered, this process took shape around what we might call *dynamic* and *static* thresholds. In the beginning, with the phenakisticope, there was no head or tail: the beginning and end were aleatory and mobile thresholds and thus dynamic subject to the wishes of the viewer-user and to the chance elements of the apparatus. The beginning and end of the show were purely conjectural. It was necessary to act from inside, so to speak, in order to impose a beginning and end as true thresholds. It was necessary, first of all, to define a common denominator, the *figure*, by gradually imposing on it increasingly rigid and thus static thresholds capable of rendering it conspicuous in relation to the other images in the series. In a sense, these second-degree thresholds were the *sine qua non* of the eventual

introduction of first-degree thresholds. As long as the figure was seen by the viewer alongside two or three other images, it could not become part of a narrative temporality. Each figure referred to those beside it, and necessarily remained on the level of attraction. Once the figure had been promoted to the rank of a sole and conspicuous image, by means of those things used to delineate it, it became possible to envision the migration of newly imposed static thresholds towards the representational limits of the apparatus: the head and the tail, the beginning and the end, which henceforth served to delineate in a clear-cut manner the entire series of figures.

From this we might conclude that attraction, which is based above all on repetition and circularity, is more at home in an open system than in a closed one. It would also appear that its model par excellence is the endless loop. These two features were present in the first apparatus for viewing animated photographic views to arrive on the world market, the Edison Kinetoscope.

This device, invented in the early 1890s, took up a number of procedures which were in the air at the time, particularly in the work of Reynaud. First of all, there was the flexible, perforated strip divided into distinct frames. However, with his animated photographs, Edison kept his distance for the time being at least from the resolutely narrative model Reynaud privileged with his animated drawings. The kinetoscope remained in the bosom of attraction, thereby exploiting the immense potential for the marvellous that animated views first possessed. Moreover, it is significant that the kinetoscope and the strips designed for it shared many features with optical toys, which were also in the camp of attraction. Its subjects were shown against a plain background, without any décor whatsoever. The strip had no apparent head or tail and was arranged to form an endless loop through the device s system of pulleys. Most often, the action depicted was extremely simple and relied heavily on the agitation of the figures and repetitive outbursts of action (such that we might describe the kinetoscope s subjects as acted upon rather than acting out). Finally, viewers

themselves operated the mechanism, this time by inserting a nickel.

Naturally, there are limits to the analogy between optical toys and the kinetoscope. After all, the short strips it showed were not meant to be presented end to end, over and over, as was the case with optical toys. The apparatus designed by Edison and Dickson imposed without fail initial thresholds, pre-determined limits; it was necessary that the strip have a starting point and that it end by stopping at another point. And yet these thresholds were not first-degree thresholds, which truly delineate the action and what it depicts. Rather, they were abrupt and unpredictable: the action began *in media res* and it ended *in media res*. Despite the realism of the images and the pre-determined length of the film, kinetoscope strips fell fundamentally and resolutely into the camp of attraction. This is the case with the strip *Sandow* [1894], for example.

When the Lumière brothers arrived on the scene a few years later with their cinematograph, they took animated pictures out of this jack-in-the-box, thereby contributing to establishing *projection* as the standard when exhibiting animated pictures. The landscape was irredeemably altered as a result, and yet attraction still remained the *primary structuring principle*, even if the cinematograph could no longer be considered a toy. In fact, it was trumpeted as sophisticated technology. In addition, the viewer was no longer responsible for setting the images in motion. Moving picture programs were clearly situated on the side of the stage show and easily took their place alongside variety shows, travelling fairs, etc.

Although viewers of animated views appear to differ from users of optical toys, they nevertheless shared a number of qualities, whose importance would be reduced with the advent of cinema-*narration*. In the *cinématographie-attraction*, for example, the viewers remained highly involved in the act of screening animated views; far from being reduced to silence, they were participants in a collective experience similar to that which took place in the parlours where optical toys were consumed. Cinematograph viewers, like the users of optical toys,

could even exercise a form of control over the unfolding of the figures, as their reactions influenced the projectionist s rendering of the picture. In addition, early moving picture programs were most often made up of disparate titles with considerable potential for attraction; indeed film strips were often presented pell-mell, in a relatively aleatory manner, like zoetrope strips. The fascination these views exercised rested almost entirely on the cinematograph s ability to capture and recreate movement. The form these views took, which was determined primarily by the limitations of the apparatus such as the brevity of the film strip was clearly propitious to their presentation in redundant and disordered programs likely to plunge the viewer into a considerably baffling temporal experience.

The cinematograph image, like that of the kinetoscope and the optical theatre, was *framed*. The thresholds bordering the image limited any movement beyond the frame, making the cinematograph s subjects *framed* subjects. Moreover, these subjects were *acted-upon* (rather than *acting-out*), and thus had a great potential for attraction. However, the fact that they were framed created a space which would soon prove to be propitious to narration. While the adoption of the flexible strip (since Reynaud in any event) had made it possible to introduce spatial thresholds which served to enclose the image, most often Edison and Lumière animated views were, just the same, without truly effective first-degree temporal thresholds (start/finish): the strip had a beginning (the head) and an end (the tail), but there were simply material thresholds, which acted without taking into account the course of the action depicted. Without well-defined beginnings and endings, these views thus remained permeable objects, consumed with spontaneous joy by viewers whose attention did not linger on them after they had sped by.

As for second-degree temporal thresholds, those gaps, found throughout the film strip, whose appearance was the product of some form of fragmentation or another (an out-and-out cut, a spot where filming had been halted and then resumed, etc.), took a while to appear. Film

images in these very early years resisted breaks and interruptions, and it seems correct to assert that, within the view at any event, a fluidity similar to that of optical toys prevailed. When cuts began to appear in greater number, they were seen by viewers, (many indicators point to this), as inopportune or even disagreeable interruptions. However, for narration to impose itself as the primary structuring principle, viewers had to learn to adapt to breaks in the film s continuity, which would soon be found in profusion in the pluripunctual animated view. At the same time, viewers had to accept the presence of first-degree temporal thresholds (the thresholds of the beginning and the end). These thresholds contained the view and, by their very presence, short-circuited attraction s propensity always to provide something else to look at, even if only along the principle of the eternal return of the same. While the end effect of views was for a long time to be attractional in nature, the introduction of thresholds for entering and exiting the view at its extremities made it possible, thanks to the insertion of a few fundamental narrative elements, for these two systems, attraction and narration, to co-exist within the view.

The manufacturers of views, just like the viewers, had to gradually get over the various second-degree thresholds which soon came to dot views in order, precisely, to be free of them. To cross a *static* threshold is to transform that threshold into something that makes possible a degree of permeability between things of the same nature. In a word, it turns the static threshold into a *dynamic* one. Hence the increasing use of off-screen space and the increasing use of camera movements, two procedures which made it possible to take in a larger space and to expand the range of possibilities offered by narration. In this way it became possible, within the view itself, to break the unicity and static quality of the frame with increasing ease and to go beyond the limits imposed by the photogram.

It then fell to the shot, or rather to the tableau, to gain autonomy and thereby become in turn (but in a yet uncertain manner) a rigid entity, a static unit. The earliest

pluripunctual films strung together, most often in a highly erratic and relatively mechanical manner, a series of unipunctual views which did not enjoy a great deal of concatenation among them. Here again, however, the rigidity of these newly imposed thresholds, those bordering the tableau, was soon overcome in favour of a true permeability of the constituent parts of the view. This encouraged an edge-to-edge communication between units that ultimately made it possible for the tableau to become a shot. In its turn, the linking of shots created the conditions for the rise of editing, a major factor in the emergence of narration as the primary structuring principle. Naturally, we will make no attempt here to describe the numerous and subtle technological, cultural and economic factors underlying the process whereby the view became autonomous. Suffice it to suggest that this delineation of the head and the tail was carried out parallel to the development of the different forms of narration typical of cinema-narration.

The question of thresholds is thus very profitable for arriving at an understanding of the development of the series animated pictures. It also makes it possible to better understand the movement from *cinématographie-attraction* to cinema-narration. Finally, we could mention here that the nature of the thresholds we have discussed is closely connected to the medium on which the images are found. Readers may have remarked throughout this article how each of the apparatuses impose thresholds which truly fashion the way the animated pictures are conceived. The phenakisticope disk, the zoetrope s flexible strip, and the celluloid used in cinema, because of their very material, determine the way in which the systems of attraction and narration hold sway over the other and give form to the uncertain desires of the figures which move about upon them in their respective ways.

In this respect, it is interesting to examine recent developments in the use of digital animated pictures. As Lev Manovich has remarked, the sequential images which abound on the Internet (such as Flash and QuickTime) share a number of features with the earliest animated pictures.12 This form of animation, which has

inaugurated a new paradigm in the cultural series animated pictures, bears a strange resemblance to the images we have been discussing in this article: its images are of reduced size and short duration, they are shown in a loop, etc. It is significant that these same forms, whose primary interest rests almost entirely on their power of attraction, have resurfaced with these new media. However, as we might have guessed, it is now possible to see on the Net various examples of short narrative films created with the help of animation software. This use of the apparatus for narrative ends is just one of many possible avenues that could be taken. Since digital images modify considerably the relationship with the reality they depict and this was the case of the earliest cinematic images it is easier for them to find their way into the camp of attraction. We must also not forget that the history of cinema, or rather the history of the cultural series of animated pictures in general, was not a gradual and direct march towards narration. The question of crossing thresholds (and of becoming free of them) illustrates one of the possibilities in the growth of a medium (the possibility, it must be said, whose central role in the process of cinema s institutionalisation has to do with external factors unrelated to the medium alone). As a system, attraction is fully assumed, so much so that it has never ceased to be present, sometimes to a considerable extent, in cinema-narration. The recent rise of spectacular, giant-screen cinema, such as IMAX, is proof of this, if proof were needed. The expression cinema-narration appears to eclipse attraction completely, but the system in question owes its name to the simple fact that narration is its *primary structuring principle*. Beyond the primary principle lay many other things, in particular attraction.

Translated by Timothy Barnard

André Gaudreault is a tenured faculty in the Département dhistoire de lart et détudes cinématographiques at the Université de Montréal, where he heads both GRAFICS (Groupe de recherche sur lavènement et la formation des institutions cinématographique et scénique) and the CRI (Centre de recherche sur lintermédialité). He is also

the director of the scholarly journal Cinémas. He has presented a number of scientific papers and has published extensively both scholarly articles and books on filmic narration and/or early cinema.

Nicolas Dulac is a Ph.D. student at both Université Paris III Sorbonne-Nouvelle and the Université de Montréal, where he is also a film history lecturer and a research assistant at GRAFICS. His research interests are early cinema, film historiography and seriality in mainstream film production.

1. This article was written under the aegis of GRAFICS (Groupe de recherche sur l avènement et la formation des institutions cinématographique et scénique) at the Université de Montréal, which is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) and the Fonds québécois de recherche sur la société et la culture. GRAFICS is a member of the Centre de recherche sur l intermédialité (CRI) at the Université de Montréal. The authors would like to thank Laurent Mannoni for granting them access to the collections of the Cinémathèque française. This text is part of a larger project, a forthcoming book to be published in 2005 in French: *Des jouets optiques au cinématographe. Avènement de limage animée*, (Brussels, Éditions Labor). This article has been previously published in Italian: Nicolas Dulac e André Gaudreault, «Il principio e la fineSÉ tra fenachistoscopio e cinematografo: l'emergere di una nuova serie culturale», *Limina/le soglie del film Film's Thresholds*, a cura di Verinoca Innocenti e Valentina Re, Udine, Forum, 2004, 185-201.
2. We use here the expression animated pictures to distinguish this series from the series moving images, moving pictures, and animated views.
3. We prefer to use this expression quite hard to translate instead of the better known cinema of attractions, since the latter refers more to a form of filmic practice than to a historically-marked phenomenon. Cinématographie-attraction » was first proposed by G.-Michel Coissac in 1925 (*Histoire du Cinématographe. De ses origines à nos jours* [Paris: Éditions du Cinéopse/ Librairie Gauthier-Villars, 1925], p. 359) and recently adopted by one of the authors of the present article to describe early cinema. See A. Gaudreault, Les *vues cinématographiques* selon Georges Méliès, ou: comment Mitry et Sadoul avait peut-être raison d avoir tort (même si c est surtout Deslandes qu il faut lire et relire)," in Jacques Malthête and Michel Marie, eds., *Georges*

Méliès, lillusionniste du fin de siècle? (Paris: Presses de la Sorbonne Nouvelle/Colloque de Cerisy, 1997), 111-31); and A. Gaudreault, *Cinema delle origini. O della cinematografia-attrazione* (Milan: Castoro, 2003), soon to be published in French (Paris: Éditions du CNRS, 2005).

4. One Lumière screening in Lyon in 1897 included the following films: *Une partie de Lawn-Tennis; Goûter de bébé; Déchargement au port dAlger; Chez lAntiquaire; Chute dune cheminée; Débarquement à lÎle-Barbe; Exercises sartillerie à Saumur;* and *Bataiile entre quatre femmes*. See *Journal des mariages*, 25 October 1897 (the authors thank Anne Gautier and Jean-Marc Lamotte for this reference).
5. An expression borrowed from Louis Francoeur (*Les Signes senvolent. Pour une sémiotique des actes de langage culturels* [Quebec City: Presses de l Université Laval, 1985]), 69-70
6. We must of course see in this the momentary and transitory mark of a more widespread predilection, one unreservedly adopted by every early version of animated views: that which, in the event, was very soon devoted to every phenomenon involving tremoring, trepidation, the fleeting, vibration, rumbling, etc.. Livio Belloï, *Le Regard retourné. Aspects du cinéma du premier temps* (Quebec City/Paris: Nota Bene/Méridiens Klincksieck, 2001), 94.
7. On this topic, see André Gaudreault, Frammentazione e assemblaggio nelle vedute Lumière, in Leonardo Quaresima, Alessandra Raengo and Laura Vichi, eds., *I limiti della pappresentazione. Censura, visible, modi di rappresentazione nel cinema* (Udine: Forum, 2000), 23-48.
8. Catalogue of the London Stereoscopic & Photographic Company, reprinted in David Robinson, Masterpieces of Animation 1833-1908, *Griffithiana* 43 (December 1991), illustration no. 31. The catalogue appears to date from the 1870s.
9. Umberto Eco, *The Open Work*, trans. Anna Cancogni (Cambridge: Harvard University Press, 1989), 112-13.
10. In our research we discovered praxinoscope strips from other manufacturers with no such vertical line.
11. Of the strips by Reynaud we are familiar with, only one (*LAmazone*, a series of figures showing a woman riding a horse) transforms these black lines from thresholds which cannot be crossed into obstacles to be hurdled by the subject of the strip.
12. In *The Language of New Media* (Cambridge: MIT, 2001), Manovich writes, on page 316, Early digital movies shared the same limitations of storage as nineteenth-century pre-cinema devices. The authors thank Bernard Perron

of the Université de Montréal for drawing this quotation to their attention.